MAINVIEW® for CICS PERFORMANCE REPORTER User Guide

Version 5.5.01

February 15, 2002

‹bmcsoftware

Contacting BMC Software

You can access the BMC Software Web site at **http://www.bmc.com**. From this Web site, you can obtain general information about the company, its products, special events, and career opportunities. For a complete list of all BMC Software offices and locations, go to **http://www.bmc.com/corporate/offices.html**.

USA and Canada		Outside USA and Canada	
Address	BMC Software, Inc. 2101 CityWest Blvd. Houston TX 77042-2827	**Telephone**	(01) 713 918 8800
		Fax	(01) 713 918 8000
Telephone	713 918 8800 or 800 841 2031		
Fax	713 918 8000		

Customer Support

You can obtain technical support by using Response Online™ (comprehensive information from the Web) or Response On Demand™. To expedite your inquiry, please see "Before Contacting BMC Software," below.

Response Online

You can obtain technical support from BMC Software 24 hours a day, seven days a week by accessing the technical support Web site at **http://www.bmc.com/support.html**. From this site, you can

- read overviews about support services and programs that BMC Software offers
- find the most current information about BMC Software products
- search a database for problems similar to yours and possible solutions
- order or download product documentation
- report a problem or ask a question
- subscribe to receive e-mail notices when new product versions are released
- find worldwide BMC Software support center locations and contact information, including e-mail addresses, fax numbers, and telephone numbers

Response On Demand

In the USA and Canada, if you need technical support and do not have access to the Web, call 800 538 1872. Outside the USA and Canada, please contact your local support center or your local sales office for assistance.

Before Contacting BMC Software

Before you contact BMC Software, have the following information available so that a technical support analyst can begin working on your problem immediately:

- product information

    — product name
    — product version (release number)
    — license number and password (trial or permanent)

- operating-system and environment information

    — machine type
    — operating system type, version, and service pack or other maintenance level such as PUT or PTF
    — system hardware configuration
    — serial numbers
    — related software (database, application, and communication) including type, version, and service pack or maintenance level

- sequence of events leading to the problem

- commands and options that you used

- messages received (and the time and date that you received them)

    — product error messages
    — messages from the operating system, such as `file system full`
    — messages from related software

Contents

Figures

Tables

About This Book

PERFORMANCE REPORTER is the MAINVIEW for CICS batch report facility. This book describes how to submit predefined PERFORMANCE REPORTER batch programs to produce reports about CICS performance and resource usage. This book also explains how to use the PERFORMANCE REPORTER Performance Reporting Language (PRL) to create your own custom reports.

This book contains examples of the reports you can produce with the PERFORMANCE REPORTER batch programs. A description of the data shown in the report accompanies each example.

Who Should Read This Book

This book is intended for anyone who needs to produce printed reports about the performance of their site's CICS systems. Readers are expected to understand CICS concepts; they should be able to write JCL jobs that produce printed reports.

How This Book Is Organized

This book is composed of five parts. Each part consists of chapters or appendixes of related information.

- Part 1, "Introduction and Report Data" on page 1 gives an overview of PERFORMANCE REPORTER and describes how to manage report data.

- Part 2, "MAINVIEW for CICS Reports" on page 43 describes how to write batch jobs to create miscellaneous MAINVIEW for CICS reports.

- Part 3, "COBOL and SAS Reports" on page 73 describes how to write batch jobs to create COBOL and SAS reports from data collected by MAINVIEW for CICS.

- Part 4, "Performance Reporting Language Reports" on page 107 describes how to create customized reports with the MAINVIEW for CICS Performance Reporting Language.

- Part 5, "Appendixes, Glossary, Index" on page 167 consists of appendixes that list sample members in the BBSAMP data set and the data fields of MAINVIEW for CICS records. This part also contains a glossary of terms and an index of the information presented in this book.

Recommended Reading

Books and online information about MAINVIEW for CICS are divided into three categories:

- Installation, implementation, and customization

- Online services

- PERFORMANCE REPORTER

This book describes how to produce hardcopy reports with PERFORMANCE REPORTER programs and example JCL. The following two sections describe the documentation for the other categories.

Installation, Implementation, and Customizaton Information

Separate books describe the procedures to install MAINVIEW for CICS, implement the MAINVIEW subsystems, and customize the product. Read the following books for the information you need to complete these tasks:

- Installation

  The *OS/390 and z/OS Installer Guide* describes the procedures for installing MAINVIEW for CICS. The *MAINVIEW Installation Requirements Guide* identifies resource requirements such as software, storage, product libraries, and FMIDs.

- Subsystem Implementation

  After installation, the MAINVIEW subsystems must be prepared to support MAINVIEW for CICS. Procedures for this task are in the *MAINVIEW Common Customization Guide*.

- Product Customization

  The *MAINVIEW for CICS Customization Guide* describes the procedures to customize MAINVIEW for CICS for specific site conditions.

- Security

  Security can be implemented for MAINVIEW products with external security managers (ESMs) through the MVS Security Authorization Facility (SAF) interface. You can find the SAF resource definitions for MAINVIEW for CICS listed in *Implementing Security for MAINVIEW Products*. This book provides procedures to create SAF resource definitions for the MAINVIEW services and commands in MAINVIEW for CICS.

Online Services Documentation

Documentation for the MAINVIEW for CICS online services consists of thee books and an online help system.

Getting Started with MAINVIEW for CICS provides an introduction to the product and offers exercises to help you get started with the online services.

The *MAINVIEW for CICS Online Services Reference Manual* describes how to monitor and manage CICS regions with the online services. This book is intended for anyone responsible for maintaining adequate CICS performance at their site.

The *MAINVIEW for CICS Monitors Guide* describes how to use the data collection monitors.

The MAINVIEW for CICS help system consists of a tutorial, specific service help, and an online message library.

- An online tutorial provides an introduction to general services that are available to MAINVIEW for CICS with the MAINVIEW subsystem. The tutorial is listed as an option on the full-screen Primary Option Menu.

- All MAINVIEW for CICS views and full-screen displays include online help. The online help extends also to the fields within a view or display. By placing the cursor directly over a field and pressing the HELP key, you can get a functional description of the field.

- The General Services MESSAGES Option can be accessed from the MAINVIEW for CICS Primary Option Menu. The MESSAGES option displays a complete description of any error message or abend code produced by a MAINVIEW product. Message descriptions are stored in the MSGLIB data set, which also can be viewed online with the ISPF BROWSE facility.

Part 1. Introduction and Report Data

This part provides an overview of the MAINVIEW for CICS PERFORMANCE REPORTER batch report facility and explains how to manage the input data used to create reports.

Chapter 1. Introduction to PERFORMANCE REPORTER

PERFORMANCE REPORTER is the MAINVIEW for CICS batch report facility. This chapter gives a short introduction to PERFORMANCE REPORTER and the various types of reports you can create.

Figure 1 shows the process used to create reports with PERFORMANCE REPORTER. CICS transaction and statistical data are gathered by data collectors and stored on specialized VSAM data sets. Frequently, long-term reports are created from data that has been archived to tape.
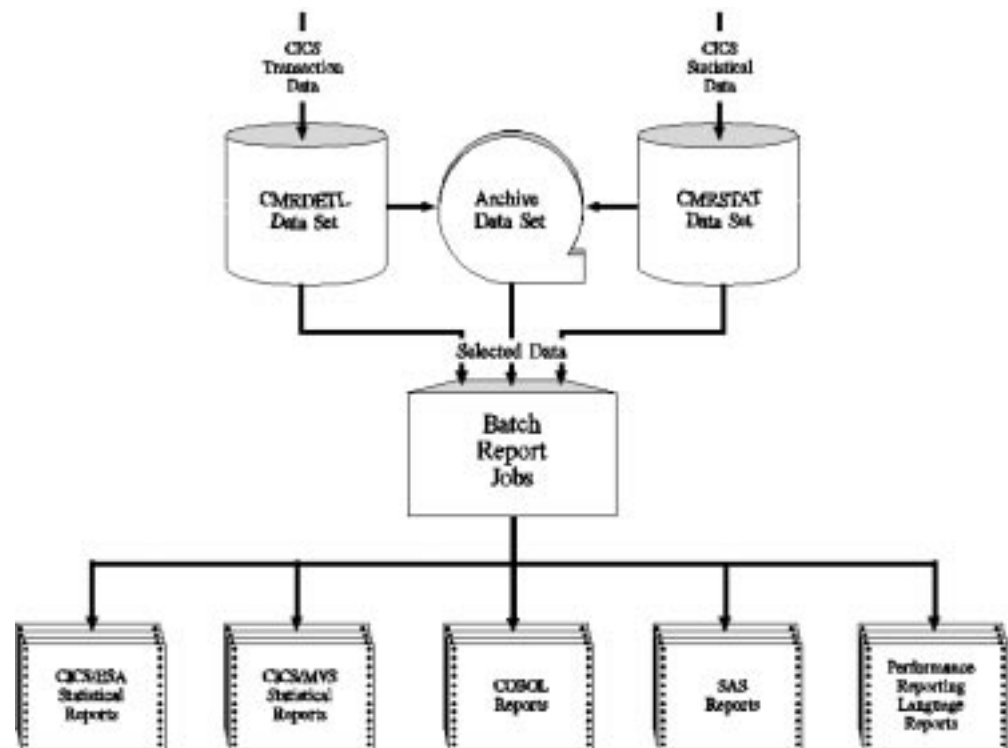
Figure 1. Overview of Process to Create Reports

Reports are created by running standard JCL batch programs. Samples of these batch programs are located in your site's BBSAMP data set. As a user, you edit copies of these samples and modify them to your site's conditions.

Normally, control statements are added to a report job. Some statements select the data from the VSAM data sets that you want to appear in a report. Other control statements specify how a report should be formatted.

Figure 1 shows the various types of reports you can create with the sample programs provided by PERFORMANCE REPORTER. The following parts of this book give examples from each report type and the control statements needed to produce specific reports.

Running Report Programs

PERFORMANCE REPORTER provides the capability to create predefined or custom reports. A predefined report has a fixed format that shows values that apply to a specific range of CICS performance parameters. Your BBSAMP data set contains sample jobs to create predefined CICS, COBOL, and SAS statistical reports.

In most cases, you merely specify the input data set and several control statements in your JCL to produce predefined reports. The control statements select the input data and specify whether the calculations produce a summary or detail report.

Other times, you may want to write programs to create custom reports. You use PERFORMANCE REPORTER's English-like Performance Reporting Language (PRL) to create custom reports. Figure 2 shows an example of a PRL program to create a custom report that summarizes transaction response times by CICS region.

```
//JOBNAME  JOB USER PARAMETERS
/*JOBPARM USER PARAMETERS
//CMRL  PROC
//PRL       EXEC PGM=CMRPRL
//STEPLIB   DD   DISP=SHR,DSN=CMR.CMRV3.BBLINK          MainView for CICS
//SYSPRINT  DD   SYSOUT=*                               Input Data Sets
//SYSUDUMP  DD   SYSOUT=*
//SYSOUT    DD   SYSOUT=*
//ISYPROG   DD   SYSOUT=*,DCB=*LRECL=80,BLKSIZE=160,RECFM=FBA=
//ISYSOUT   DD   SYSOUT=*,DCB=*LRECL=80,BLKSIZE=160,RECFM=FBA=
//PNLLIB    DD   DISP=SHR,DSN=CMR.CMRV3.BBPLIB
//CMRDETL   DD   DISP=SHR,DSN=CMR.CMRV3.CMRDETL
//CMRSTAT   DD   DISP=SHR,DSN=CMR.CMRV3.CMRSTAT
//SORTWK01  DD   UNIT=SYSDA,SPACE=*CYL,5*
//SORTWK02  DD   UNIT=SYSDA,SPACE=*CYL,5*
//SORTWK03  DD   UNIT=SYSDA,SPACE=*CYL,5*
//        PEND                                          PERFORMANCE REPORTER
//RUNSTEP   EXEC CMRL                                   Control Statements
//SYSIN DD *
SET CLASS = 'R'
SET REPORTID = 'RES2RPT2'
SET TITLE = 'SUMMARY TRANSACTION ROSTER'
SELECT TYPE 6E RECORDS FROM CMRDETL
   USING CMRDATE T6ERESP T6ECPUR T6EDIST T6EFCWT T6ESUST T6ETSWT
   SUMMARY
REPORT
END
```

Figure 2. Typical Batch Job to Create a Custom Report

After modifying the CMRPRL batch job to your site's conditions, you include short PRL routines to select data and the format of your report.

An Overview of PERFORMANCE REPORTER Reports

This book describes the reports you can create with PERFORMANCE REPORTER, organized into two basic groups: predefined reports and custom reports.

Predefined Reports

As shown in , PERFORMANCE REPORTER includes sample predefined programs to create CICS, COBOL, and SAS statistical reports. Each of these groups includes sample programs to create functionally similar reports. Typically, predefined report programs include short-term and long-term reports.

Short-Term Reports

Short-term reports show resource usage for the current or immediately preceding CICS execution.

Destination Control Table Report
Either detailed or summarized usage of intra- and extrapartition transient data

File Control Table Report [1]
Either detailed file usage at specific times of the day or total file activity

Journal Control Table Report
Either detailed journal and journal buffer usage at specific times of the day or total journal activity

Processing Program Table Report[1]
Table entry statistics that can start with the program name, the highest fetch count, or the highest use count

Program Control Table Report[1]
Either detailed transaction usage at specific times of the day or total activity for each transaction

Temporary Storage Table Report
The usage of temporary storage and the auxiliary temporary storage data set

---

[1] Includes only active table entries

Terminal Control Table Report [1]

Either terminal activity at specific times of the day or total terminal activity

Transaction Class Usage Report

Class usage within the CICS region

Note: Short-term reports are generated by using PRL input with distributed sample report statements.

Long-Term Reports

Long-term report programs report about tabulated transaction or program resource usage, either individually or grouped as application systems or as histograms of CICS performance. These include

Resource Analysis Report

Tabulates resource usage and run-time statistics on transactions or programs individually or as a grouped application. The control statements submitted with the batch job control language determine time and date ranges, report input, chronological ordering of the data, and the report output type (a summarized or detailed report or a report of only the resources not meeting service levels).

Graphic Histogram Report

Produces histograms of selected CICS performance parameters or resource usage. The control statements submitted with the batch job define the CICS performance parameters that appear in a report.

Service Level Analysis Report

Shows the distribution of transactions into service level ranges.

Custom PRL Reports

With PRL control statements, you can create custom reports from data stored on the CMRDETL and CMRSTAT data sets. describes the usage of PRL programs to produce short-term batch reports for CICS users. Using control statements, you specify and format the following information:

- Type of data selected from the records stored on CMRDETL or CMRSTAT data sets

- Date and time range of selected records

- Interval counts for each data item or summarized totals you have specified

- Type of CMRDETL or CMRSTAT record processing resulting from a PRL computation or condition

- Report titles and column headings

- Organization of the report

---

[1] Includes only active table entries

Chapter 2. Collecting and Archiving Report Data

PERFORMANCE REPORTER batch reports are created from data gathered by the MAINVIEW for CICS data collectors. Depending upon the sampling parameters specified when MAINVIEW for CICS was customized, CICS data is collected over periodic intervals from monitored targets and then written as records to VSAM databases.

This chapter gives a description of the various data records that are used to create batch reports. An outline of the various steps you must complete to prepare this data is also part of the discussion. Chapter 3, "Managing Report Data" on page 17 gives a more complete description of some of the procedures introduced in this chapter.

This chapter concludes with a section that describes the procedure to archive and purge records from data sets.

Collecting Report Data

CICS data collected by MAINVIEW for CICS is written as records to CMRDETL and CMRSTATS data sets. PERFORMANCE REPORTER uses data dictionaries (CMRDETL and CMRSTATS) located in the BBPLIB data set to reformat the stored records for reports.

The *MAINVIEW for CICS Customization Guide* describes how to allocate and initialize both data sets. Appendix B, "CMRDETL: Transaction Detail Records" on page 173 describes each type of record that can be stored on a CMRDETL or CMRSTATS data set.

Transaction Detail Data (CMRDETL)

A detail record is written to the CMRDETL data set for every transaction that occurs in a CICS region monitored by MAINVIEW for CICS. This record contains a history of the transaction's lifespan.

Figure 3 gives an overview of the various steps to prepare detail transaction records for reports.
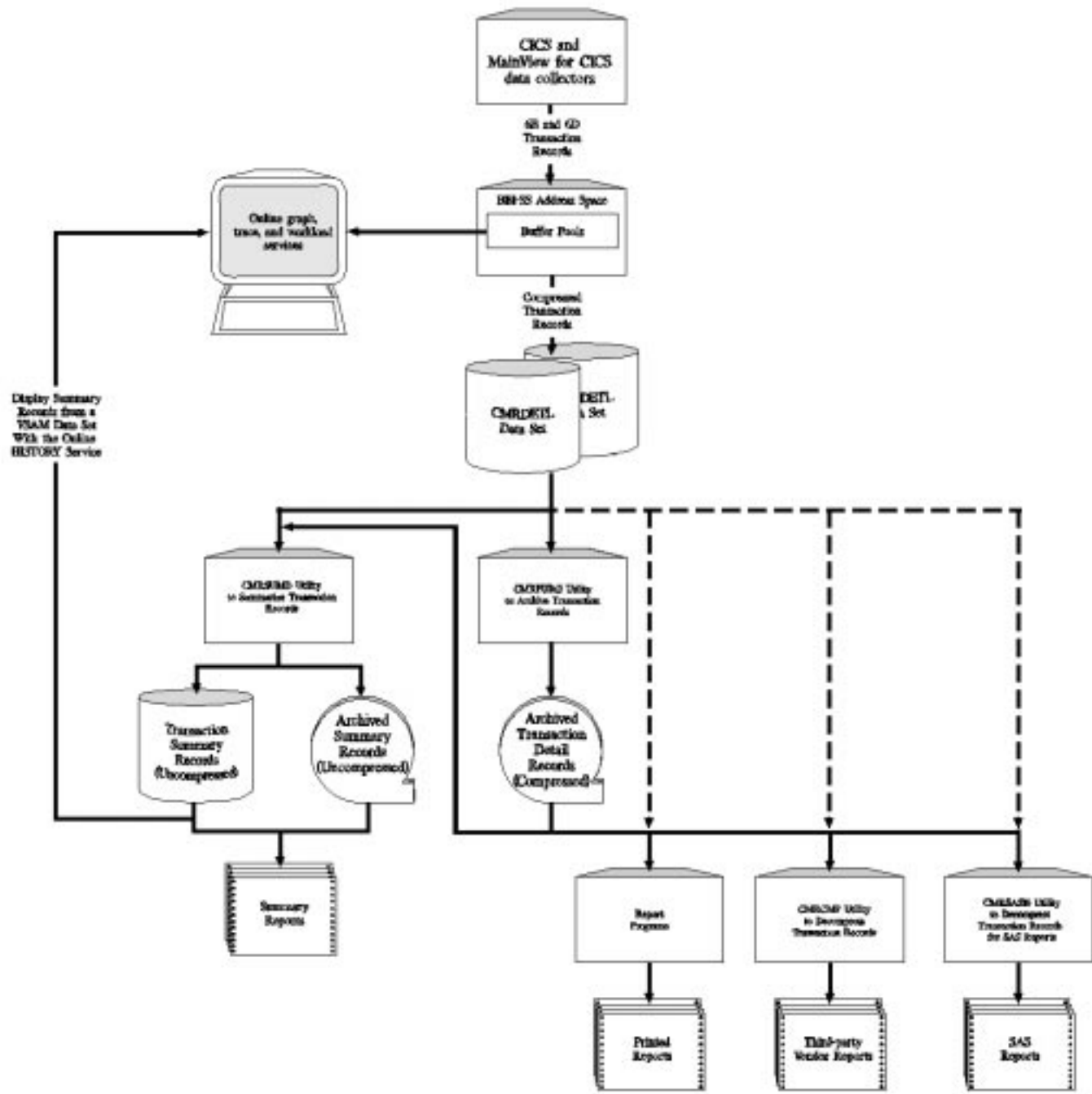
Figure 3. MAINVIEW for CICS Transaction Detail Records

There are two types of detail transaction records. A 6E record is written for every transaction that completes successfully. The CMRDETL data set also contains 6D abended transaction records. They are kept separate from 6E records because their data may be unreliable due to the abended transaction.

Batch jobs that produce the reports select data from the CMRDETL data set by the record ID (the hexadecimal code 6E or 6D) located in the TYPE field of the record. The following example shows a PRL control statement to select a 6E record as input data for a report:

SELECT TYPE 6E

Appendix B, "CMRDETL: Transaction Detail Records" on page 173 gives a complete description of every field of 6E and 6D transaction records. This section includes two tables that list the fields of the record by offset order and by function.

Before 6E or 6D records are written to the CMRDETL data set, they are held in transient buffer pools. You can view this data with the MAINVIEW for CICS online trace, graph, and workload services. After that, the detail trace records are compressed and written to a CMRDETL data set.

You can use single or dual CMRDETL data sets. Dual data sets allow you to monitor almost continuously without having to stop and archive the data set when it becomes full. CMRDETL data set switching allows archives to occur without interrupting the data collection process. The *MAINVIEW for CICS Customization Guide* describes how to use the control statements located in member CMRDTL00 of your BBPARM data set to specify the switching conditions for dual CMRDETL data sets.

PERFORMANCE REPORTER batch reports can be prepared from compressed detail transaction records held in the CMRDETL data set or a tape archive. If you are going to use this data to prepare SAS reports or other third-party vendor reports, the records must be decompressed before running the batch report programs. Sample members CMRCMP and CMRSAS10 located in your BBSAMP data set can be edited to run batch jobs that decompress 6E or 6D transaction records.

CMRSUMD is a utility that summarizes selected detail transaction records. You can summarize transaction activity over periods from minutes to days to create uncompressed summary records stored to tape or a VSAM database. In turn, these summary records can be used to create specialized summary reports.

If you store summary records to a VSAM data set, you can display them online with the MAINVIEW for CICS HISTORY service. "Creating Reports from Summarized Data" on page 24 describes how to create summary records from detail transaction records.

CICS Operational Statistics (CMRSTATS)

MAINVIEW for CICS collects CICS statistics according to parameters specified in the CMRSOPT startup table. These statistical records are stored in the CMRSTATS data set.

CICS statistical records are first written to the system management facility (SMF) data set with CICS SMF 110 records. Statistical records are then reformatted and moved by the CMRSTATS batch routine to the CMRSTATS data set.

Note: The CMRSTATC program is still supported for compatibility with earlier releases of MAINVIEW for CICS. However, due to changes in CICS statistics from one release to the next, the records that CMRSTATC produces may contain incomplete or invalid data. To obtain complete, up-to-date CICS statistics, you should use the enhanced CMRSTATS program.

Figure 4 shows how CICS statistical records are processed for batch reports.
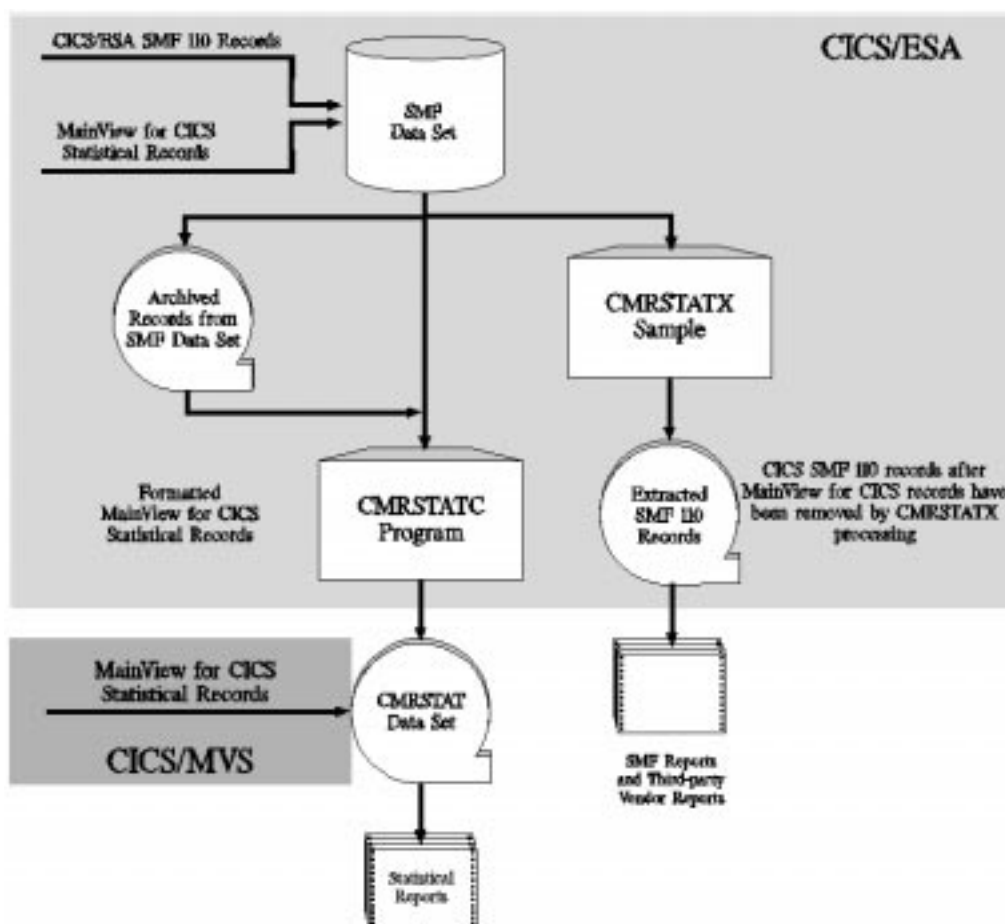
Figure 4. CICS Statistical Records

Predefined statistical reports select data from the CMRSTATS data set. If you want to create CICS SMF or other third-party vendor reports from data held in the SMF data set, you must first filter out MAINVIEW for CICS statistical records. A sample member named CMRSTATX located in your BBSAMP data set removes MAINVIEW for CICS records, leaving SMF 110 records for other reports.

All statistical records contain a field in the header area that identifies the record type. Records are selected from the CMRSTATS data set by the two-digit hexadecimal code entered into the TYPE field of the record. Global Performance records (Type CC) are written to the data set at five-minute intervals. Other types of records are written according to the startup parameters specified in the CMRSOPT table.

Archiving Data (CMRPURG)

CMRPURG is a program that purges and archives data held in CMRDETL data sets. If specified, CMRPURG can also archive and purge selected data to a tape data set and merge it with other archive tapes.

Archiving a Single CMRDETL Data Set

This section describes the procedure to archive and purge records from a single CMRDETL data set. describes the procedure to archive dual CMRDETL data sets.

Before submitting the CMRPURG job for batch execution (when the CICS region is active), you must stop data collection. Issue either the CICS SMN2 transaction from a CICS terminal or the FST2 QOFF transaction from the MVS operator's console.

The execution JCL for CMRPURG is shown in . Descriptions corresponding to the numbered statements follow the JCL.

Note: Sample JCL for the CMRPURG program is in the CMRPURGE member of your BBSAMP data set.

```
//jobname  JOB  user parameters
/*JOBPARM  user parameters
//JOBLIB   DD   DISP=SHR,DSN=CMR.CMRV5.BBLINK
//ARCHIVE  EXEC PGM=CMRPURG
//TAPEIN   DD   DISP=OLD,DSN=PREV.HISTORY.FILE              (1)
//TAPEOUT  DD   DISP=(NEW,CATLG),DSN=CMR.MERGED.ARCHIVE,UNIT=TAPE (2)
//CMRWRK1  DD   DSN=CMR.CMRWRK1,SPACE=(CYL,(10,10)),UNIT=SYSDA   (3)
//         DISP=(NEW,DELETE,CATLG)
//CMRDETL  DD   DISP=SHR,DSN=CMR.CMRV5.CMRDETL              (4)
//REPORT   DD   SYSOUT=*
//SYSPRINT DD   SYSOUT=*
//SYSIN    DD   *
DATE=mmddyyyy                              (5)
HISTORY=YES                               (6)
```

Figure 5. Sample JCL to Run CMRPURG for a Single CMRDETL Data Set

The numbered items in the following list explain the JCL statements of the example CMRPURG job shown in Figure 5.

Note: The default block size is 12000. You can override the default block size with a value of 11994 or greater.

(1) Identifies a data set that is to be merged and archived with the purged CMRDETL records.

(2) Identifies the output tape data set for the purged CMRDETL records.

Archiving Report Data

(3) Specifies a data set, CMRWRK1, to hold all records that are not archived during the reorganization phase. The recorder data sets also must be defined with REUSE so that reorganization can occur.

The records can be written to either tape or disk.

(4) Identifies the CMRDETL recorder data sets to be processed. Archiving each data set to a separate tape as separate jobs increases access to statistical data because there is less volume. More days can then be kept online without requiring a purge.

(5) Specifies the date for purging. This statement must start in column 1. All data stamped with this or a previous date is purged and, if requested, archived to the output tape data set. DATE=12319999 purges all the data from the recorder data set.

Note: If 12319999 is specified, the CMRWRK1 data set is not required.

The date for purging can also be specified as a number of days preceding today. The format is

DATE=*-*nn*

where *nn* is a two-digit number of days before today. Note that the date calculated can represent a day in the previous year. The actual date calculated by the program is displayed in an informational message on the report output.

(6) Specifies the type of history tape manipulation to be performed. This statement must start in column 1. Valid values are

NO No input or output history tapes are to be used. All data that has a date earlier than the DATE value will be purged.

OUT No input tape is to be used. Only an output tape is to be created containing the data to be purged.

YES Both input and output tapes are to be used. The data on the input tape is to be merged with the data to be purged from the MAINVIEW for CICS recorder data sets and written to the output tape.

Archive-Purge Process

The CMRPURG job performs the following operations:

1. Reads data from the recorder data sets, merges it with another archive data set (HISTORY=YES), and then writes it to the history output tape (HISTORY=YES or HISTORY=OUT). If HISTORY=NO is specified, the data is deleted and not archived.

2. Purges data from the recorder data sets.

Note: Purging is performed here so that abends (such as tape errors) do not leave the recorder data sets in a state of reduced integrity.

The data that is purged is determined by the DATE= control statement. The entire data set can be purged by specifying DATE=12319999, or a portion of the recorder data set can be purged as follows:

a. If only part of a data set is to be purged, define the VSAM REUSE parameter when the MAINVIEW for CICS recorder data set is defined, as described in the *MAINVIEW for CICS Customization Guide*, and allocate a temporary data set, as shown by CMRWRK1 in the previous sample JCL. CMRPURG uses CMRWRK1 to

contain temporarily the records that are to remain on the recorder data set. REUSE reorganizes and resets the CMRDETL recorder data sets so that records written to CMRWRK1 from these data sets can be reloaded.

b. CMRPURG processes the CMRDETL recorder data set. The records stamped with the DATE value or a date previous to the specified date are written as specified by the HISTORY= control statement.

c. The selected records are deleted from CMRDETL if NOREUSE is specified, which can be a time-consuming update to the CMRDETL data set.

If an abend occurs while archiving data, check the messages on the report output to determine at what point it occurred. CMRPURG does not write the same record twice if it exists on both the history and the recorder data sets.

Each phase of the archive-purge process is recorded in the Recorder File Purge Report. Figure 6 shows a typical listing for CMRDETL recorder data sets.

Report Listing for CMRDETL Recorder File

C I C S   M A N A G E R   R E C O R D E R   F I L E   P U R G E

FT290I-DETAIL TRANSACTION RECORDER FILE BEING PROCESSED
FT293I-BEGINNING ARCHIVE OF REQUESTED RECORDS
FT294I-ARCHIVE OF REQUESTED RECORDS COMPLETED
FT295I-BEGINNING PURGE OF REQUESTED RECORDS
FT296I-PURGE OF REQUESTED RECORDS COMPLETED
FT297I-CMRWRK1 DATASET FOUND - BEGINNING REORGANIZATION
FT298I-ENTERING SECOND PHASE OF REORGANIZATION
FT301I-REORGANIZATION OF RECORDER FILE COMPLETED

```
 ------ RECORDER FILE ------    -- HISTORY FILE ACTIVITY --
   INPUT      PURGED           INPUT    OUTPUT

  000001667  000001666        000000000 000001666
```

Figure 6. Sample Recorder File Purge Report Listings

Archive-Purge Completion

When the archive-purge process is complete, activate data collection from CICS with an SMN2 transaction or from an MVS console using FST2. This reopens the CMRDETL data set.

Archiving Dual CMRDETL Data Sets

The use of CMRPURG to process dual CMRDETL data sets is restricted to archival only. Any archival utility, such as IDCAMS REPRO, can be used to archive the data. The BBI-SS PAS purges all data and reorganizes the file automatically when a switch occurs. With dual CMRDETL data sets, archiving begins after a CMRDETL data set becomes full, when an I/O error occurs, or when a switch is manually requested with the FST2 SWITCH command.

BBSAMP member CMRDJCL contains sample JCL to execute CMRPURG when a CMRDETL switch occurs. The following options must be used if you use CMRPURG to archive dual CMRDETL data sets:

HISTORY   HISTORY=YES or HISTORY=OUT must be used.

DATE   DATE=12/31/9999 must be used.

LEAVE   Specifies whether to leave data in CMRDETL or purge it after archiving is completed. This statement must start in column 1. Valid values are

>   **NO**   Data is removed from CMRDETL. LEAVE=NO is the default and must be used for a single CMRDETL data set.

>   **YES**   Data remains in CMRDETL after archiving. This should be specified when using dual CMRDETL data sets. It provides HISTORY access to the data after a CMRDETL switch occurs.

For additional information about how to set up and use dual detail files, see the *MAINVIEW for CICS Customization Guide.*

Purging Summary Records from the CMRSUMD Data Set

The CMRSUMD utility summarizes performance data over selected intervals and places uncompressed summary records in an output VSAM data set. You can create batch reports from the summary records or view the records online with the HISTORY service.

CMRPURG can purge selected summary records from the CMRSUMD data set. This allows you to keep some summary records required for long-term reports and remove others that are no longer needed.

The JCL shown in can be used to run the CMRPURG program. An additional WORKLOAD control statement must be added to the job stream beneath the SYSIN DD statement. The WORKLOAD control statement selects which summary records are purged.

The WORKLOAD control statement has the following positional parameters:

>   **WORKLOAD** = *wkld, group, time*

>   *wkld*   Is the name of the workload used to summarize records. All records are purged by default.

group   Is the name of the group of CICS regions combined to create a summary workload. All groups are purged by default.

The group name is specified with the SGROUP control statement of the CMRSUMD utility.

time   Is the summarization interval of summary records. All summary intervals are purged by default.

The following examples show how to use the WORKLOAD control statement with the CMRPURG program to purge summary records from the CMRSUMD data set.

- WORKLOAD=IBMTRANS,*,1440

   Daily summary records of all groups of the IBMTRANS workload are purged from a VSAM data set.

- WORKLOAD=,,60

   All hourly records from all workloads and groups are purged from a VSAM data set.

Archiving Report Data

Chapter 3. Managing Report Data

This chapter describes several procedures to prepare data that appears in batch reports. Separate procedures describe how to

- Create statistical records

- Reformat compressed detail transaction records

- Summarize detail transaction records

Creating Statistical Records

To create statistical records from data collected by a CICS region, you must run the CMRSTATS program.

Note: The CMRSTATC program is still supported for compatibility with earlier releases of MAINVIEW for CICS. However, due to changes in CICS statistics from one release to the next, the records that CMRSTATC produces may contain incomplete or invalid data. To obtain complete, up-to-date CICS statistics, you should use the enhanced CMRSTATS program.

The CMRSTATS program reads data directly from an SMF data set or a sequential extract from an SMF data set. The program determines the type of SMF data set that is allocated to the job. Only one VSAM data set is read at a time, and the required SMF data set (SYS1.MAN1, SYS1.MAN2) must be specified.

Sample JCL to run this program is provided in BBSAMP as member CMRSTJCL. You can use the sample JCL along with distributed sample report statements to generate CICS statistical reports.

shows the JCL for running the CMRSTATS program.

```
//CMRSTJCL JOB user parameters
/*JOBPARM user parameters
//*
//* THIS SAMPLE JCL CAN BE USED TO EXTRACT CMRSTATS STATISTICAL
//* DATA FROM THE SMF DATA PRODUCED BY MAINVIEW FOR CICS.
//*
//* YOU MUST MAKE SOME CHANGES TO THIS JCL. THE LINES THAT MAY
//* REQUIRE CHANGES ARE INDICATED BY A <=== MARKER.
//*
//JOBLIB   DD DSN=MAINVIEW.CMR55.BBLINK,DISP=SHR          <=== CHANGE
//*
//* THE FOLLOWING STEP (STATS) EXTRACTS THE CMRSTATS DATA FROM
//* THE SMF FILE AND PLACES IT INTO A FILE THAT CAN BE USED
//* BY THE PERFORMANCE REPORTER LANGUAGE (PRL), OR OTHER USER
//* WRITTEN PROGRAMS TO PRODUCE REPORTS ON THE PERFORMANCE OF
//* YOUR CICS REGIONS.
//*
//STATS   EXEC PGM=CMRSTATS
//SYSPRINT DD SYSOUT=*
//SMFIN    DD DSN=smf.data.set,DISP=SHR          <=== CHANGE
//CMRSTATS DD DSN=stat.data.set,DISP=(,CATLG,DELETE),      <=== CHANGE
//         VOL=SER=VOLSER,UNIT=SYSDA,            <=== CHANGE
//         SPACE=(CYL,(15,15),RLSE),DCB=BLKSIZE=19000   <=== CHANGE
//SYSIN    DD *
 CMRSTATS CONTROL STATEMENTS SHOULD BE INSERTED HERE.      <=== CHANGE
 (SEE THE PERFORMANCE REPORTER USER GUIDE FOR DETAILS.)
//*
//*  THE FOLLOWING STEP (PRL) USES THE STATISTICAL DATA EXTRACTED
//*  BY THE FIRST STEP (STATS) TO PROVIDE A PERFORMANCE REPORTER
//*  LANGUAGE REPORT (SERVICE LEVEL ANALYSIS REPORT).
//*
//PRL     EXEC PGM=CMRPRL
//SYSPRINT DD   SYSOUT=*
//SYSUDUMP DD   SYSOUT=*
//SYSOUT  DD   SYSOUT=*
//SORTWK01 DD   UNIT=SYSDA,SPACE=(CYL,5)
//SORTWK02 DD   UNIT=SYSDA,SPACE=(CYL,5)
//SORTWK03 DD   UNIT=SYSDA,SPACE=(CYL,5)
//ISYPROG  DD   SYSOUT=*,DCB=(LRECL=80,BLKSIZE=3120,RECFM=FBA)
//ISYSOUT  DD   SYSOUT=*,DCB=(LRECL=80,BLKSIZE=3120,RECFM=FBA)
//ISYPDUM  DD   SYSOUT=*,DCB=(LRECL=80,BLKSIZE=3120,RECFM=FBA)
//PNLLIB   DD   DSN=MAINVIEW.CMR55.BBPLIB,DISP=SHR     <=== CHANGE
//CMRSTATS DD   DSN=stat.data.set,DISP=SHR          <=== CHANGE
//SYSIN   DD   DSN=MAINVIEW.CMR55.BBSAMP(sample),DISP=SHR  <=== CHANGE
//
```

Figure 7. JCL for CICS Statistical Reports (CMRSTJCL)

Note: You must supply values for the parameters shown in lowercase in Figure 7.
Parameters in uppercase must be specified exactly as indicated.

Required Parameters

Following is a description of the JCL you must supply for CMRSTATS in addition to the standard JCL used at your site:

smf.data.set
> Is the name of the SMF data set that is to be converted into CICS statistical data.

stat.data.set
> Is the name of the output data set to be created.

blksize
> Is any valid block size for the output data set in the range of 6000 - 32760.
>
> The BLKSIZE must be at least 6000. All other DCB information is defaulted by the program.

sample
> Identifies the report input to be processed.

Note: The SYSPRINT DD statement is required. It is for error messages and, optionally, for a list of parameters, if any are specified. The SYSIN data set is optional and is necessary only if user parameters are specified.

Control Statements

The following rules apply to the control statements you specify with CMRSTATS:

- There is only one control statement to a SYSIN statement.

- The control statement can start anywhere from column 1 but cannot be continued on the next line.

- If you do not supply application names, all CICS data from the SMF data set is processed.

  You can select data from the SMF data set that was collected from a specific CICS region.

- If both generic and specific application IDs are specified, the specific ID is used for selection.

  You can select only one application ID.

Valid control statements are as follows:

FROM TIME=hh:mm:ss
> Include SMF data created after the specified time.

TO TIME=hh:mm:ss
> Include SMF data created up to and including the specified time.

FROM DATE=mm/dd/yyyy
> Include SMF data produced from the specified date onward.
>
> **Note:** If you specify a date in the old format (mm/dd/yy), yy is interpreted as 19yy.

FROM DATE=*-n
> Include the SMF data from today minus n days onward. Yesterday would be *-1.

TO DATE=mm/dd/yyyy
Include SMF data produced up to and including the specified date.

Note: If you specify a date in the old format (mm/dd/yy), yy is interpreted as 19yy.

TO DATE=*-n
Include SMF data up to and including today minus n days. Yesterday would be *-1.

GAPPLID=applid
Include only SMF data for the specified generic application ID.

SAPPLID=applid
Include only SMF data for the specified specific application ID.

APPLID=applid
Synonym for SAPPLID.

Note: Parameter errors cause the run to terminate with a return code of 8 and an appropriate message on SYSPRINT.

SYSPRINT Error Messages

SYSPRINT errors messages are accompanied by a return code of 8.

FT581I Previous parameter was invalid.

The parameter statement listed above the message on SYSPRINT is not valid.

FT582I SMFIN DD statement missing or invalid.

The OPEN for SMFIN failed. Generally, this means the DD statement is missing.

FT583I CMRSTAT DD statement missing or invalid.

The OPEN for the CMRSTATS DD statement failed. Generally, this means the DD statement is missing. However, it also could mean an invalid BLKSIZE parameter. BLKSIZE must be at least 6000.

FT584I Insufficient memory to run the program.

More memory is required to process the data used for a report. Either increase the region size or restrict the report to a specific range of data. The date or time ranges normally have little effect on the amount of required memory.

Memory is allocated above the 16 MB line.

Console Error Messages

The following console error message results from a 2048 ABEND.

FT585I SYSPRINT DD statement missing or invalid.

The OPEN for the SYSPRINT data set failed. Generally, this means the SYSPRINT DD statement is missing.

Reformatting Compressed Detail Transaction Records

Type 6E and 6D records are compressed when they are stored on the CMRDETL data set. You must decompress these records before they can be read by programs other than PERFORMANCE REPORTER programs. The records can be decompressed into standard MAINVIEW for CICS data or a format compatible with CICS/MVS CMP data.

MAINVIEW for CICS offers two programs to decompress Type 6E records:

- CMRCMPW decompresses Type 6E records in a separate batch job.

- CMRCMPR can be called from within a user program to dynamically decompress Type 6E records.

Note: Type 6E records produced by earlier versions of MAINVIEW for CICS are always decompressed to the record format supported by the current version. Any fields that are new to the current version are initialized to zeros or blanks.

CMRCMPW Batch Decompression Program

Figure 8 shows a sample batch job to execute the CMRCMPW program. The CMRCJCL job is in your BBSAMP library.

Compressed Type 6E records can reside on a current, active CMRDETL data set or be archived to tape. You select either source with the appropriate DD statement and an INPUT= control statement (INPUT=VSAM or INPUT=TAPE). Figure 8 shows examples of both DD statements.

```
//S1  EXEC  PGM=CMRCMPW
//STEPLIB DD  DSN=CMR.CMRV3.BBLINK,DISP=SHR
//CMRDETL DD  DSN=CMR.CMRV3.CMRDETL,DISP=SHR    <- IF INPUT=VSAM
//*TAPEIN  DD  DSN=....ARCHIVE.DATA,DISP=SHR    <- IF INPUT=TAPE
//SYSUDUMP DD SYSOUT=*
//OUTPUT  DD  DSN=CMR.PROCESS.DATA,DISP=(,CATLG),SPACE=(TRK,(15,15)),
//   UNIT=SYSDA,DCB=(RECFM=U,LRECL=0,BLKSIZE=6233)
//SYSIN  DD  *
INPUT=VSAM
FORMAT=2.1
```

Figure 8. JCL for CMRCMPW Batch Decompression Program

The LRECL length must be 0 for CMP data format or 4 bytes less than the BLKSIZE for MAINVIEW for CICS.

Control statements normally follow the SYSIN DD statement in the job stream. The following control statements are used with the CMRCMPW batch program:

- **FORMAT=2.1|2.1Y|CMR**

  Specifies the format of the CMRDETL record after it has been decompressed.

FORMAT=2.1|2.1Y   Decompressed records are compatible with CICS/MVS 2.1.2 CMP.

The Julian date will be formatted by report programs according to the value you specify:

2.1   Formatted as *ccyyddds*, where

     cc   Is the 2-digit century value, either 00 for 1900 or 01 for 2000.

     yy   Is the 2-digit year value.

     ddd   Is the 3-digit day value.

     s   Is a packed decimal sign value.

2.1Y   Formatted as *yyyyddds*, where

     yyyy   Is the 4-digit year value.

     ddd   Is the 3-digit day value.

     s   Is a packed decimal sign value.

The output data set that stores the CMP decompressed records must be allocated with the following parameters:

DCB=(RECFM=U,LRECL=0,BLKSIZE=6126)

Note: The BLKSIZE=6126 value is hardcoded into the program. It cannot be changed.

FORMAT=CMR   Decompressed records are compatible with all versions of MAINVIEW for CICS**.**

The output data set that stores the CMR decompressed records must be allocated with the following parameters:

DCB=(RECFM=VB,LRECL=xxxx,BLKSIZE=12000|yyyyy)

Note: The default block size is 12000 (BLKSIZE=12000). If you change the block size, the LRECL value must be at least 4 bytes less than the BLKSIZE value.

- **INPUT=VSAM|TAPE**

  Specifies the type of input data set holding the compressed CMRDETL records.

  INPUT=VSAM   Compressed records are stored on the current, active CMRDETL data set.

  INPUT=TAPE   Compressed records are archived to a tape data set.

- **NEWAPPL=xxxxxxxx**

  Is a 1- to 8-character alphanumeric name that identifies the APPLID placed in the SMF header portion of decompressed CMRDETL records. This value replaces existing APPLIDs of compressed input records. Decompressed records retain their existing APPLIDs if the NEWAPPL control statement is not specified.

  The FORMAT control statement must be specified with the NEWAPPL control statement to identify the format of the decompressed CMRDETL records.

- **SELECT=xxxxxxxx|***

    Selects records to be decompressed by the name of the CICS region that produced the CMRDETL record.

    If the SELECT control statement is not specified, the first CICS ID encountered is used.

    SELECT=xxxxxxxx   1- to 8-character alphanumeric name of a CICS region.

    SELECT=*   All input records are selected.

CMRCMPR Decompression Program

The CMRCMPR program dynamically decompresses CMRDETL records. Instead of executing CMRCMPW in batch mode, the CMRCMPR program can be called from a user program with an assembler language routine, as shown in Figure 9.

```
      LA    R1,PARMLIST
      CALL  CMRCMPR
      LTR   R15,15        Q. GOOD DECOMPRESS
      BNZ   HANDLERR         NO -  GO HANDLE ERROR
      .
      .
PARMLIST DS    0D
PARM1    DC    A(DFLAG)
PARM2    DC    A(RECORD)
DFLAG    DC    C'D'
```

Figure 9. Assembler Routine to Dynamically Call CMRCMPR Program

Standard linkages include the following registers:

- Register 1 contains the address of a parameter list that

    - Points to a 'D' flag that signifies a decompress request.

    - Points to the record to be decompressed. The field must be large enough to contain the entire decompressed record. LLBB must be the first record field. It must be set to the current length of the record.

- Register 13 contains the address of a standard register save area.

- Register 14 contains the return address.

- Register 15 contains the return code from the CMRCMPR program.

Creating Reports from Summarized Data

This section explains how to use PERFORMANCE REPORTER's CMRSUMD utility to summarize detail transaction records stored on your CMRDETL data set.

CMRSUMD is a batch utility program that creates workloads from summarized CICS performance records. You can summarize data collected from multiple CICS regions in intervals from 1 minute to 24 hours. The summary workloads produced by the CMRSUMD utility are compatible with the COBOL, SAS, and Performance Reporting Language (PRL) report programs of MAINVIEW for CICS.

Figure 10 illustrates how CMRDETL records are summarized. The CMRSUMD utility processes unsummarized records held in a VSAM or sequential data set.
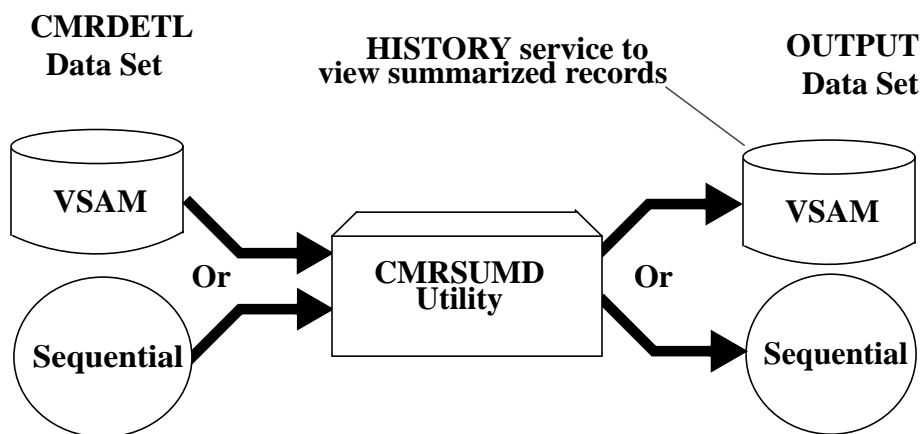
Figure 10. Summarizing CMRDETL Records with the CMRSUMD Utility

After CMRSUMD summarizes the records over the intervals you requested, the newly created summary workloads are stored on VSAM or sequential output data sets. Summary workloads can be created with data obtained from any supported version of CICS.

If you store your summarized records on a VSAM data set, you can view them online with the MAINVIEW for CICS HISTORY service. "Viewing Summary Records" on page 39 describes the procedure to use the HISTORY service.

Summarizing CMRDETL records gives you several benefits. One benefit is that fewer records are required to produce reports that span long periods of time. For example, producing a monthly report of average daily CPU usage requires only one record per day.

Another benefit of using summarized records is that you can write simpler report programs. Fewer records must be specified for each report interval and the batch program to create the reports generally requires less processing time for each query.

Summarized records are useful for identifying performance trends that become apparent only over long intervals. After you locate CICS problem areas with summarized records, you can use unsummarized data to create reports that give you the detail you need to analyze problems.

CMRSUMD JCL

Figure 11 shows an example of JCL to execute the CMRSUMD program and summarize report data.

```
//S1  EXEC  PGM=CMRSUMD
//STEPLIB DD  DSN=CMR.BBLINK,DISP=SHR
//*
//CMRDETL DD  DSN=CMR.DETAIL.DATA,DISP=SHR
//OUTPUT  DD  DSN=CMR.SUMMARY.DATA,DISP=SHR
//COPYDD  DD  DSN=CMR.COPY.CMRDETL,DISP=SHR
//REPORT  DD  SYSOUT=*
//SYSIN   DD  *
```

Figure 11. Sample JCL for Creating Summary Data

Figure 11 contains the following JCL statements:

EXEC   Specifies the name of the program that generates the summarized detail data (PGM=CMRSUMD).

//STEPLIB   Defines the program library containing the MAINVIEW for CICS load modules.

//CMRDETL   Defines the name of the input data set containing the detail records to be summarized. The detail records can be from a single CICS region or multiple CICS regions. For maximum performance, detail records should be sorted in date and time sequence.

If necessary, you can use a sort utility to combine multiple detail files into date and time sequence; for example, you can specify:

SORT FIELDS=(9,20,CH,A) for VSAM
SORT FIELDS=(13,20,CH,A) for sequential (to account for the RDW)

//OUTPUT   Defines the name of the summary output data set. You must specify the BLKSIZE parameter when creating a new sequential output data set.

Note: When you run multiple executions of the CMRSUMD program against the same CICS region, workload, and timeframe using a VSAM data set:

• Workloads with the same name as existing records are combined with the records.

• New workloads are inserted.

• A maximum of 999 workloads are supported.

//COPYDD   (Optional) Defines the name of the selected sequential output data set. See the COPY= parameter on page 33 for more information.

Note: When creating a copy data set, specify RECFM=VB, LRECL=2000, and BLKSIZE=4000 bytes (or greater).

//REPORT   Defines the SYSOUT data set containing the program statistics compiled by CMRSUMD.

//SYSIN   Contains the control statements you must use to specify the input records and summarization options. See "Control Statement Descriptions" on page 27 for a description of each control statement.

CMRSUMD Control Statements

The control statements described in this section run the CMRSUMD utility. They are coded after the SYSIN DD statement in your JCL. Each control statement uses parameters to specify the report data and summarization options. In the descriptions in this section, default parameters are underlined.

Coding Control Statements

The global control statement parameters affect all the workloads defined in the CMRSUMD job. Local parameters apply to only a specific workload. You can code CMRSUMD control statements in a predefined order that sets both global and local conditions for each of the workloads defined in the job.

BMC Software recommends coding the CMRSUMD control statements in the order shown below.

1. **Global Control Statements**

   Global control statements set conditions for the CMRSUMD job itself, and are not directly related to workloads. The global control statements are

   NEWAPPL
   REPLACE
   COPYAPPL

2. **Default control statements**

   Default control statements set the default conditions for the workloads specified in the CMRSUMD job.

   A default control statement can be any control statement except one that is explicitly defined as global or workload-specific.

3. **Workload definition control statements**

   The workload definition control statements define the workloads in the CMRSUMD job. They are coded immediately before the default override and the workload-specific control statements.

   Together, the workload defintion control statements specify the conditions for a specific workload in the CMRSUMD job. They are as follows:

   a. **Default override control statements**

      The workload default override control statements define operating conditions for a specific workload. They may differ from those previously set by the default control statements.

      A default override control statement can be any control statement except one that is defined as global or workload-specific.

   b. **Workload-specific control statements**

Workload-specific control statements specify the input data that is used by a specific workload in the CMRSUMD job. The workload-specific control statements are as follows:

> SKIPFLIO
> PROCFLIO
> EXCLxxxx
> INCLxxxx

Figure 12 shows the recommended sequence of CMRSUMD control statements. These three sets of control statements are repeated for each workload in the CMRSUMD job stream.

```
REPLACE=YES
TYPE=NOTERM
FILES=TIME
MINUTES=15
WORKLOAD=PAYROLL
INCLTRAN=PAYR
MINUTES=5
EXCLUSER=DRP1CICS
WORKLOAD=ACCOUNTS
MINUTES=10,30
FILES=SUMMARY
INCLTRAN=AA
```

Figure 12. Recommended Control Statement Order in CMRSUMD JCL

Control Statement Descriptions

The CMRSUMD utility has 27 control statements. These control statements fall into four broad classes based upon how often you are expected to use them.

You will use some control statements in almost every CMRSUMD job. Other control statements you will use often, but not for every job. A third class is composed of control statements that are used even less frequently. The last class contains control statements that are used rarely, only to set unique conditions for a summarization job.

The following four sections discuss the CMRSUMD control statements, grouped together by frequency of use.

Commonly Used Control Statements

The four control statements in this class are used for almost every CMRSUMD job.

WORKLOAD=*name*
> Specifies the name assigned to the workload. CMRSUMD places the workload name in the T6EPGNM (program) field of the summarized record. If you do not explicitly specify a workload name, the default workload name is SYSTEM.

> **Note:**   Up to 999 workloads are supported for a specific VSAM data set.

MINUTES={1|5|10|15|30|60|1440}
> Specifies the summarization interval. You can specify multiple intervals; for example:

> MINUTES=5,30,60

> These summarization intervals are permitted:

> **1**   Increments of 1 minute.

> **5**   Increments of 5 minutes.

10	Increments of 10 minutes (the default interval).
15	Increments of 15 minutes.
30	Increments of 30 minutes.
60	Increments of 1 hour.
1440	Increments of 1 day. MINUTES=DAILY also can be specified.

When the MINUTES control statement precedes the WORKLOAD statement, the summarization interval you specify is in effect for all workloads. To specify a unique summarization interval for each workload, place an appropriate MINUTES control statement after each WORKLOAD statement.

TYPE={<u>ALL</u>|NOTERM|TERM}
Specifies whether non-terminal tasks are included in the workload.

ALL	All tasks are included in the workload.
NOTERM	Only non-terminal tasks are included in the workload (the default).
TERM	Only terminal tasks are included in the workload. Non-terminal tasks are excluded.

When the TYPE control statement precedes the WORKLOAD statement, the type of task you specify is in effect for all workloads. To specify a different type of task for each workload, place an appropriate TYPE control statement after each WORKLOAD statement.

SGROUP=_list_
Specifies a list of CICS regions that are combined to create a workload. The first name in the SGROUP list identifies the summarized records.

Note: SELECT is an alias for SGROUP. That is, you can use SELECT=_list_ to specify a list of CICS regions.

Only one SGROUP and its identifier are used in a single execution; subsequent references to the same name use the first definition. For example, if you specify the following statements:

```
SGROUP=AORS,CICS1,CICS2,CICS3
...
. and other statements
...
SGROUP=AORS
...
```

you get the same region list for the second SGROUP as you do for the first SGROUP. This simplifies the definition of CICS system groups.

When the SGROUP control statement precedes the WORKLOAD statement, the list of CICS regions you specify is in effect for all workloads. To specify a different list of CICS regions for each workload, place an appropriate SGROUP control statement after each WORKLOAD statement.

Note: It is not necessary to combine all the CICS regions data into a single execution to produce combined workloads. CMRSUMD combines data from different executions for the same groups and workloads.

Frequently Used Control Statements

The three control statements in this class are used often but not for every CMRSUMD job.

EXCL*xxxx*=list
Specifies a list of resources to exclude from the summary. The EXCL control statement can be repeated for as many resources as required. EXCL*xxxx* must be specified within a WORKLOAD.

The *xxxx* variable must be one of the following values:

Value	Description
PLAN	Name of the DB2 plan associated with the transaction.
4GLS	Name of the 4GL panel or program associated with the transaction.
OPID	Three-character OPID associated with the transaction.
TERM	Four-character CICS terminal ID associated with the transaction.
TRAN	Transaction ID associated with the transaction.
PROG	Program name associated with the transaction.
NETN	Up to an 8-character net name associated with the transaction.
USER	Up to an 8-character extended user ID associated with the transaction.
FILE	Name of a file referenced by the transaction.

INCL*xxxx*=list
Specifies a list of resources to include in the summary. The INCL control statement can be repeated for as many resources as required. INCL*xxxx* must be specified at the workload level.

The *xxxx* variable must be selected from the following values:

Value	Description
PLAN	Name of the DB2 plan associated with the transaction.
4GLS	Name of the 4GL panel or program associated with the transaction.
OPID	Three-character OPID associated with the transaction.
TERM	Four-character CICS terminal ID associated with the transaction.

> **Note:** If you want to combine summarized records gathered in intervals of 10 minutes into hourly records, you must specify INCLTERM=10 to ensure records that overlap timeframes are not combined to give invalid data.

Value	Description
TRAN	Transaction ID associated with the transaction.
PROG	Program name associated with the transaction.
NETN	Up to an 8-character net name associated with the transaction.
USER	Up to an 8-character extended user ID associated with the transaction.
FILE	Name of a file referenced by the transaction.

NEWAPPL=*name*
> Specifies a new application ID (APPLID) that is written in the key of the output records.

> **Note:** The NEWAPPL control statement is used when you want to view records online. The HISTORY service expects the key of the record to match the name specified in the target field of the display panel. SUMMDATA is the default key. Use NEWAPPL when you want to change the default key.

Less Frequently Used Control Statements

The control statements in this class are used occasionally.

REPLACE={NO|YES}
> Specifies whether data collected during the execution of the job replaces any data from previous executions that have the same workloads. This control statement applies to VSAM data sets only.

> You must use REPLACE to re-create workloads from detail records that have been previously processed. By default, the data is combined with existing data.

FILES={TIME|SUMMARY|COUNT}
> Specifies the summarization option for the file entries in the records. If you specify FILES prior to the first WORKLOAD control statement, it defines the default type of summarization for all workloads.

> **TIME** CMRSUMD summarizes records by file entries. The 255 files with the longest elapsed I/O time are written to the summarized file (the default).

> **SUMMARY** CMRSUMD summarizes all entries and only the first 20 entries are written to the summarized file.

> **COUNT** CMRSUMD summarizes the file entries and the 20 files with the largest number of I/Os are written to the summarized file.

DETAIL={NO|YES}
> Specifies whether CMRSUMD treats files as individual entities or as a single entity for each file type. If you specify DETAIL prior to the first WORKLOAD control statement, it defines the default value for all workloads.

> **NO** Summarizes files entries by a common resource, such as CICS, ADABAS, DBCTL, DB2, and so forth (the default).

> **YES** Specifies that you want each file entry processed separately.

> > **Note:** Use DETAIL when you want to determine the overall effect of a given area rather than the overall effect of specific files.

ZERODATA={NO|YES}
> Specifies whether intervals are written to the summarized file when no tasks are executed for a given workload; for example, when CICS is not active, no tasks are executed.

> If you specify ZERODATA before the first WORKLOAD control statement, it defines the default value for all workloads.

> **NO** Specifies that CMRSUMD does not write intervals with zero tasks to the summarized file (the default).

> **YES** Specifies that CMRSUMD writes intervals with zero tasks to the summarized file.

FROM DATE=mm/dd/yyyy
 Specifies the starting date of the selected records.

Note: If you specify a date in the old format (mm/dd/yy), yy is interpreted as 19yy.

You can specify the starting date using a relative format that is an offset from the current date. For example, to start the selected records with yesterday's date, specify

FROM DATE=*-1

If you specify FROM DATE before the first WORKLOAD control statement, it defines the default starting date for all workloads.

TO DATE=mm/dd/yyyy
Specifies the ending date of the selected records.

Note: If you specify a date in the old format (mm/dd/yy), yy is interpreted as 19yy.

You can specify the ending date using a relative format that is an offset from the current date. For example, to end the selected records with yesterday's date, specify

TO DATE=*-1

If you specify TO DATE before the first WORKLOAD statement, CMRSUMD provides the default ending date for all workloads at the workload level.

FROM TIME=hh:mm:ss
Specifies the starting time of the selected records. The format is hh:mm:ss.

If you specify FROM TIME before the first WORKLOAD control statement, it defines the default starting time for all workloads.

TO TIME=hh:mm:ss
Specifies the ending time for selecting records. The format is hh:mm:ss.

If you specify TO TIME before the first WORKLOAD control statement, it defines the default ending time for all workloads.

START TIME=hh:mm:ss
Specifies the starting time for the selection interval. You can use this time to specify a period, such as the prime shift for a given workload.

STOP TIME=hh:mm:ss
Specifies the ending time for the selection interval. STOP TIME can be used with TO DATE to specify an ending date and time.

The following example shows START TIME, STOP TIME, FROM TIME, and TO TIME control statements together in a job stream.

```
FROM DATE=*-5
FROM TIME=12:00:00
TO DATE=*-1
TO TIME=12:00:00
WORKLOAD=TEST1
INCLTRAN=AA*
START TIME=08:00:00
STOP TIME=17:00:00
WORKLOAD=TEST2
INCLTRAN=AA*
FROM DATE=*-5
TO DATE=*-3
```

In this example, the default date and time ranges for the selected records are from noon five days ago through yesterday at noon.

Workload TEST1 uses records that are collected between 8 am and 5 pm. On the first day, records are collected from noon to 5 pm. On the last day, records are collected from 8 am to noon.

Workload TEST2 collects records from noon four days ago through the following day at noon.

MINRESP=*nnnnn.nnn*

Sets a minimum response time threshold of a transaction record in seconds. Records with transaction response times that exceed the minimum threshold are included in the summarization workload. Records with response times less than the threshold are excluded.

MAXRESP=*nnnnn.nnn*

Sets a maximum response time threshold of a transaction record in seconds. Records with response times less than the maximum threshold are included in the summarization workload. Records that exceed the maximum response time are excluded.

The MINRESP and MAXRESP control statements are often used together to filter transaction records by response times. You can create summary workloads that contain only those transactions with response times that fall within the interval set by the two control statements.

MINCPU=*nnnnn.nnn*

Sets a minimum CPU usage threshold of a transaction record in seconds. Records with CPU usage that exceed the minimum threshold are included in the summarization workload. Records with CPU usage less than the threshold are excluded.

MAXCPU=*nnnnn.nnn*

Sets a maximum CPU usage threshold of a transaction record in seconds. Records with CPU usage less than the maximum threshold are included in the summarization workload. Records that exceed the maximum threshold are excluded.

The MINCPU and MAXCPU control statements can be used together to filter transaction records by CPU usage. You can create summary workloads that contain only those transactions with CPU usage that falls within the interval set by the two control statements.

Rarely Used Control Statements

The control statements in this class set unique conditions that are rarely used for most CMRSUMD jobs.

TABLE=*name*
Specifies the name of a table created using the CMRRAPM macro, which specifies transactions and programs to be included in the workload.

The TABLE control statement

- Is provided for compatibility with the CMRRAPM table
- Has limited flexibility

For example, default values are used for all control statements (other than WORKLOAD and INCLxxxx, which are contained within the CMRRAPM definitions).

COPYAPPL=*name*
Specifies an application ID (APPLID) that is written in the key of the records copied to the copy data set.

COPY={NO|YES}
Specifies whether the selected records are copied to the output file specified with the COPYDD DD statement.

When COPY is specified before the first WORKLOAD control statement, it determines whether selected records are copied to the output file for all workloads.

NO   Selected records are not copied. NO is the default.

YES   If a record is selected for summarization, it is also copied to the sequential data set specified with the COPYDD DD statement.

> **Note:** These copied records are useful when performing detailed analysis of the data without reading the entire detail data set again.

SKIPFLIO=*list*
Specifies a list of files that are excluded in the summarized file data. SKIPFLIO must be specified at the workload level.

> **Note:** Use of SKIPFLIO does not affect the selection of records, as happens with the EXCLFILE control statement.

PROCFLIO=*list*
Specifies a list of files to include in the summarized file data. Other files are not summarized. Use PROCFLIO to insure that files you specify are reported for a workload. PROCFLIO must be specified at the workload level.

> **Note:** Use of PROCFLIO does not affect the selection of records, as happens with the INCLFILE control statement.

USEREXIT=_name_

Specifies the name of a user-written routine that is given control when a record is processed during the CMRSUMD summarization job. The input record is passed to the exit. The record is tested against conditions set by the user-written routine. The user exit either includes or excludes the record in the summarization job based upon the outcome of the test conditions.

BBSAMP member CMRUSRD is an example of this exit.

Running the CMRSUMD Utility

Figure 13 is an example of a job that runs the CMRSUMD utility and creates summary workloads.

```
//USR1SUM JOB  (3831),'USER NAME',CLASS=T,MSGCLASS=R,
//   NOTIFY=USR1,TIME=60
//*
//S1  EXEC  PGM=CMRSUMD,REGION=4096K
//STEPLIB DD  DSN=CMR34.CMR1.LOAD,DISP=SHR
//CMRDETL DD  DSN=CMR1.DETAIL.DATA,DISP=SHR
//*
//SYSUDUMP DD SYSOUT=*
//OUTPUT  DD  DSN=CMR.SUMMARY.DATA,DISP=SHR
//REPORT   DD SYSOUT=*
//SYSIN DD *
*
*  SAMPLE CMRSUMD INPUT
*  REFER TO MEMBER CMRSUMD FOR EXECUTION JCL
*    THIS MEMBER CREATES DAILY SUMMARY RECORDS FOR 4 WORKLOADS
*      MAINVIEW for CICS TRANSACTIONS
*      CICS TRANSACTIONS
*      ALL OTHER TRANSACTIONS
*      ALL TERMINAL TRANSACTIONS
*
* SET DEFAULT FOR DAILY TIME PERIOD AND ALL TRANSACTION TYPES
*
MINUTES=1440
TYPE=ALL
*
* CREATE MAINVIEW for CICS WORKLOAD
*
WORKLOAD=CMRTRANS
INCLTRAN=FST2,SMN2,FIC2,FCD2,JNL2
*
* CREATE IBM TRANSACTION WORKLOAD
*
WORKLOAD=IBMTRANS
INCLTRAN=C*,DSNC
*
* CREATE ALL TRANSACTION WORKLOAD (EXCEPT THOSE IN PREVIOUS)
*
WORKLOAD=ALLTRANS
EXCLTRAN=FST2,SMN2,FIC2,FCD2,JNL2
EXCLTRAN=C*,DSNC
*
* CREATE ALL TERMINAL TRANSACTION WORKLOAD (OVERRIDE TRANSACTION TYPE)
*
WORKLOAD=ALLTERM
TYPE=TERM
```

Figure 13. CMRSUMD JCL and Control Statements

The control statements shown in Figure 13 are examples from member CMRSUMD1 of the BBSAMP data set. The job creates four different summary workloads each day. A brief description of each workload is given in the comments section of the job shown in Figure 13. A description of the summarized transaction records created for each workload is shown beneath the SYSIN DD statement.

The report shown in Figure 14 is produced by the CMRSUMD utility. It shows the input CMRDETL records that were summarized across the four workloads defined in the CMRSUMD job.

WORKLOAD	GROUP	ID#	MIN	INPUT	ACCEPTED	OUTPUT	UPDATED	MAX-FILES
CMRTRANS	1	DLY	1,583,507	2,346	4	4	4	
IBMTRANS	2	DLY	1,583,507	935,254	4	4	6	
ALLTRANS	3	DLY	1,583,507	645,907	4	4	6	
ALLTERM	4	DLY	1,583,507	1,471,378	4	4	6	

Figure 14. CMRSUMD Workload Summary Report

Input records are summarized daily, and the OUTPUT column shows four records were created for each workload over the four-day interval.

Description of the Report Fields

The report fields shown in Figure 14 are as follows:

WORKLOAD   Workload name assigned to the summarization.

GROUP   Summarization group of combined CICS regions.

ID #   Internal workload ID assigned to the workload and used to make the key unique.

MIN   Number of minutes in the summary.

INPUT   Number of records in the input file that meet the date, time, and CICS system criteria.

ACCEPTED   Number of records in the input file that were accepted for summarization.

OUTPUT   Number of summarized records written.

UPDATED   Number of summary records that were updated with input records from this job.

MAX-FILES   Number of files accessed by the summarized workload.

        Note: When MAX-FILES is greater than 20, it indicates some files were not written in the summarized records.

Additional fields appear in the Summary Report if the REPLACE=YES or USEREXIT=*name* control statements are included in the CMRSUMD job. If REPLACE=YES is included, two fields named DELETED and REPLACED appear in the report. The DELETED field shows the number of records that were deleted because the interval contained no records and ZERODATA=NO was specified. The REPLACED field shows the number of records held in the output data set that were replaced by new records.

If USEREXIT=*name* is included in the CMRSUMD job, two fields named INCLUDED and EXCLUDED show the number of records that were included or excluded from the summary workloads due to the test conditions set by the user-written routine.

The INCLUDED field shows the number of records that were summarized that normally would have been excluded if the exclude decision had not been overridden by the user-written routine. The EXCLUDED field shows the number of records that were excluded from summarization that normally would have been included if the include decision had not been overridden by the user-written routine.

Creating PRL Reports from Summary Data

Figure 15 shows the JCL and control statements to produce a Performance Reporting Language (PRL) report from the summary workloads created by the CMRSUMD utility. The JCL is from BBSAMP member CMRL, which is generic JCL to run PRL jobs. The JCL must be edited to your site's conditions before running the job.

The PRL control statements added beneath the SYSIN DD statement are from member CMRPRL28 located in the BBSAMP data set. These control statements produce a PRL report from summarized 6E and 6D records.

The seven control statements shown between the USING and REPORT statements specify the data extracted from the summary records that appears in the PRL report. Each of these seven control statements produces a separate, tabular column in the PRL report.

```
//USR1PRL  JOB (NUMBER),'USER NAME',
//         CLASS=F,
//         MSGCLASS=R,
//         MSGLEVEL=(1,1),
//         NOTIFY=USR1
/*JOBPARM    L=99,COPIES=1,R=10,S=SYSB
//PRL      EXEC PGM=CMRPRL,REGION=2048K,TIME=180
//*
//*  THIS IS SAMPLE JCL TO EXECUTE THE MAINVIEW for CICS PERFORMANCE
//*  REPORTING LANGUAGE (PRL).  CHANGE THE STATEMENTS INDICATED
//*  TO REFLECT YOUR INSTALLATION.
//*
//STEPLIB  DD   DISP=SHR,DSN=CMR34.CMR1.LOAD
//SYSPRINT DD   SYSOUT=*
//SYSUDUMP DD   SYSOUT=*
//SYSOUT   DD   SYSOUT=*
//ISYPROG  DD   SYSOUT=*,DCB=(LRECL=80,BLKSIZE=160,RECFM=FBA)
//ISYSOUT  DD   SYSOUT=*,DCB=(LRECL=80,BLKSIZE=160,RECFM=FBA)
//CMRDETL  DD   DISP=SHR,DSN=CMR1.TEMP.CMRDETL1
//SORTWK01 DD   UNIT=SYSDA,SPACE=(CYL,30)
//SORTWK02 DD   UNIT=SYSDA,SPACE=(CYL,30)
//SORTWK03 DD   UNIT=SYSDA,SPACE=(CYL,30)
//SYSIN    DD   *
*
* THIS IS THE SAMPLE REPORT THAT USES THE SUMMARIZED DATA CREATED BY
* CMRSUMD.
*
* (YOU MAY NEED TO MODIFY THE REPORT OUTPUT CLASS ON THE NEXT STATEMENT)
SET CLASS = 'R'
SET ZHEADING = 'SINGLE'
*
SET TITLE = 'SUMMARIZED DATA ANALYSIS'
SELECT TYPE 6E AND 6D RECORDS FROM CMRDETL
 USING CMRDATE -
    CMRTIME  -
    SUMWKLD  -
    SUMCICS  -
    T6ETASK  -
    T6ERESP  -
    T6ECPUR
 REPORT
END
```

Figure 15. PRL Report JCL and Control Statements

The online PRL report shown in Figure 16 on page 37 is produced by the job shown in Figure 15. The PRL report shows the task count, average response time, and CPU usage of the

summarized workloads over four daily periods. Notice that the seven tabular columns of the report appear in the same order as the PRL control statements in the job to produce the report.

```
RECORDED  RECORDED WORKLOAD CICS    COUNT OF TASKS   RESPONSE   CPU REAL
  DATE      TIME   NAME     GROUP    IN SUMMARY        TIME       TIME
---------- -------- -------- -------- ---------------- ----------- ----------

09/12/1998 24:00:00 CMRTRANS  CICSPROD       265     0.171      0.057
09/12/1998 24:00:00 IBMTRANS  CICSPROD    207831     0.067      0.005
09/12/1998 24:00:00 ALLTRANS  CICSPROD      9017     0.280      0.015
09/12/1998 24:00:00 ALLTERM   CICSPROD    215355     0.075      0.006

09/13/1998 24:00:00 CMRTRANS  CICSPROD       866    17.090      0.067
09/13/1998 24:00:00 IBMTRANS  CICSPROD    614318     0.206      0.005
09/13/1998 24:00:00 ALLTRANS  CICSPROD    140551     1.042      0.022
09/13/1998 24:00:00 ALLTERM   CICSPROD    739681     0.295      0.007

09/14/1998 24:00:00 CMRTRANS  CICSPROD       226     0.135      0.064
09/14/1998 24:00:00 IBMTRANS  CICSPROD     16229     0.035      0.002
09/14/1998 24:00:00 ALLTRANS  CICSPROD     38577     1.192      0.018
09/14/1998 24:00:00 ALLTERM   CICSPROD     46405     0.434      0.014

09/15/1998 24:00:00 CMRTRANS  CICSPROD       989     0.156      0.064
09/15/1998 24:00:00 IBMTRANS  CICSPROD     96876     0.026      0.002
09/15/1998 24:00:00 ALLTRANS  CICSPROD    457762     1.017      0.016
09/15/1998 24:00:00 ALLTERM   CICSPROD    469937     0.750      0.015
```

Figure 16. PRL Report Using Summary Data

Description of the Report Fields

The fields of the PRL report shown in Figure 16 are as follows:

RECORDED DATE	Ending date of the summarization interval in mm/dd/yyyy format.
RECORDED TIME	Ending time of the summarization interval in hh:mm:ss format.
WORKLOAD NAME	Name of the workloads with summarized data.
CICS GROUP	CICS region from which summary records were created.
COUNT OF TASKS IN SUMMARY	Number of tasks summarized for this program.
RESPONSE TIME	Average internal response time for the summarized tasks.
CPU REAL TIME	Average real CPU time for the summarized tasks.

Notes on Using the CMRSUMD Utility

The remainder of this chapter gives several hints about using the CMRSUMD utility.

Selecting Input Records

The EXCL*xxxx* and INCL*xxxx* control statements are often used together to select CMRDETL records for summarization. As their names suggest, EXCL*xxxx* excludes records and INCL*xxxx* includes records used by the CMRSUMD utility. The parameters of both control statements define the CICS resources whose records are selected for summarization.

Both control statements can be specified more than once for each workload defined in the job to run CMRSUMD. The control statements are interpreted in the following manner during CMRSUMD processing:

- If more than one INCL*xxxx* control statement is specified for a single workload, the parameters are logically ORed together. Records are included if the selected resources meet any parameter condition.

- If more than one EXCL*xxxx* control statement is specified for a single workload, the parameters are logically ORed together. Records are excluded if the selected resources meet any parameter condition.

- INCL*xxxx* processing occurs first.

   If a resource meets a condition specified by the INCL*xxxx* control statement, the included records are then tested against the conditions set by the EXCL*xxxx* control statement.

   Records are summarized if they meet any condition set by the INCL*xxxx* statement and do not meet any condition set by the EXCL*xxxx* statement.

Figure 17 shows the logic of selecting records for summarization when the INCL*xxxx* and EXCL*xxxx* control statements are included in the CMRSUMD job.
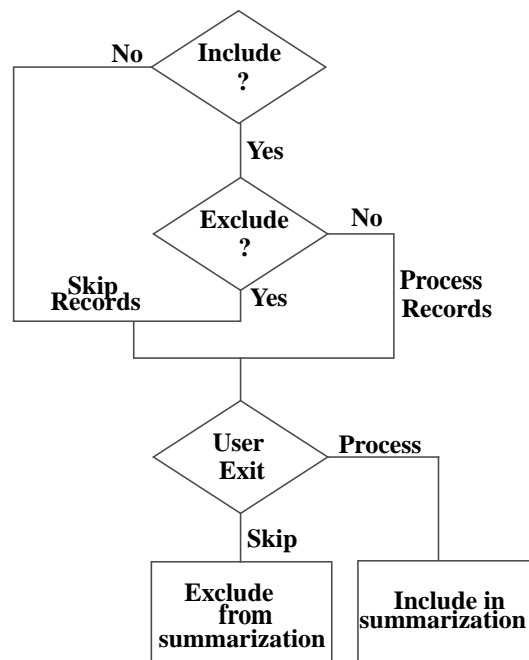
Figure 17. Selecting Records for Summarization

Notice the USEREXIT control statement at the bottom of Figure 17. You can set additional selection criteria with a user-written routine that tests each record. This routine is given control when a record is processed during the CMRSUMD summarization job. In the example shown in Figure 17, the exit to the user-written routine is passed all records that have been tested previously by the INCL*xxxx* and EXCL*xxxx* control statements.

The user-exit routine is the final arbiter of including or excluding records from the summarization job. Records that have been previously excluded can be reinserted into the job

to be summarized. Likewise, records that have been selected for summarization can be overridden and excluded from the job.

Detail File Switch

CMRSUMD's detail file switch provides an opportunity to summarize data. By adding a step after the archive is completed, you can summarize the data from the detail data set as needed.

You can summarize each detail record into multiple workloads in a single execution of the program. Each execution can produce as many workloads as required.

When the output file is VSAM, the summarization program combines data from multiple executions; it is not necessary to summarize only at daily intervals, such as midnight.

Replacing Summary Data

The default summarization program can combine data from the current execution with summary data created earlier if you use a VSAM output data set. Occasionally, you may need to replace an existing workload with new data; for example, you could have omitted a transaction when creating the workload definitions.

To replace a summary workload, specify REPLACE=YES when you run the CMRSUMD utility. Only workloads and summarization intervals in the current execution are affected by the REPLACE=YES option.

Warning: The REPLACE=YES control statement replaces all workload data with duplicate timeframes and also deletes any current intervals that no longer contain data.

Viewing Summary Records

If summary records are stored on a VSAM data set, they can be viewed with the MAINVIEW for CICS HISTORY service. Intervals can be selected from the data set and expanded to get varying levels of detail about the records that compose the interval.

To view summary records with the HISTORY service:

1. Create summary records and store them on a VSAM data set. SUMMDATA is the default target name to view summary records. Otherwise, use the NEWAPPL control statement to set the key of the records to a name other than the CICS region.

2. Add SUMMDATA to BBPARM member BBIJNT00 (do not add BBIISP00 block requests).

3. Add SUMMDATA to the BBPARM member CMRDTL00 and point DSN1 to the VSAM data set created in Step 1; for example:

   TARGET=SUMMDATA,DSN1=SUMMARY.VSAM

4. Select the HISTORY service from the MAINVIEW for CICS Primary Option Menu.

5. Access the summary records by setting the CICS target to SUMMDATA in the upper right corner of the MAINVIEW for CICS History Selection panel.

   CICS ===> SUMMDATA

6. Complete the remaining fields of the History Selection panel to set any filters and the time and date intervals of the records you want to view.

Figure 18 shows the four workloads of daily summary records created earlier with the CMRSUMD utility. You can get more detail about each workload by expanding the HISTORY views.

```
BMC Software -------MAINVIEW FOR CICS HISTORY SUMMARY------ TIME: 08:29:24
COMMAND ===>                    CICS ===> SUMMDATA
 -- ENDING --     TASK WORKLOAD SUMM CICS  RESPONSE   CPU  FILE STOR
 DATE  TIME     COUNT  NAME INTV GROUP    TIME  TIME  CALLS (K) A
    24:00:00    989 CMRTRANS 1440 CICSPROD  0.156  0.064    8  10
    24:00:00  96,876 IBMTRANS 1440 CICSPROD  0.026  0.002    1   8
    24:00:00 457,762 ALLTRANS 1440 CICSPROD  1.017  0.016    6  29 *
    24:00:00 469,937 ALLTERM  1440 CICSPROD  0.750  0.015    6  28 *
```

Figure 18. HISTORY Service Display of Summary Records

The HISTORY display of summary records varies from the standard detail data. The ending time shown in the HISTORY display is the end of the summarization interval, not the ending time of the detail records associated with the interval.

Storing Summary Data on VSAM Data Sets

A VSAM data set provides the best repository of summarized data:

- The space required to maintain a month of summarized data is small. The CMRPURG utility of MAINVIEW for CICS can be used to maintain the data set, so you can keep as little or as much data available as you require. "Archiving Data (CMRPURG)" on page 11 gives instructions for removing unwanted records from the VSAM data set with the CMRPURG utility.

- Summary records can be viewed with the HISTORY service.

- The summarization program combines new data with existing data only when the output is VSAM. This provides a complete interval of data even when different jobs summarized the data. For example, a daily summary record can comprise data collected from several CMRDETL data sets when switching is active.

- You can create combined workloads from detail files within multiple CICS regions without first combining the data. Although you can create combined workloads using a sequential data set, data from multiple executions is not combined and the CICS input data must be sorted into date/time sequence.

- The requirement to sort input data is removed. However, performance improves when input data is stored in sorted order.

CMRDETL Fields Altered by CMRSUMD

The CMRSUMD utility alters the values of some CMRDETL record fields during summarization. The following list describes the changes to these fields after they have been summarized:

Field Name	Contents of a Summarized Record
TYPE	Contains 6D, if any input record during the interval is a 6D abend record. See T6EABCD.
CMR$SYS	Assigned the value from the NEWAPPL control statement.

Field Name	**Contents of a Summarized Record**
CMRTIME	Contains the time at the end of the interval.
CMRCLOCK	Contains the name of the region or SGROUP (if multiple CICS regions are combined).
CMRRECID	Contains a value to make each record unique. This comprises a minute value of one byte followed by a sequential number assigned to each workload. This number is in packed format.
T6ETRTY	Contains an X indicating a summary record.
T6EUSER	Contains the name of the CICS region or SGROUP, if multiple CICS regions are combined. The alias, SUMMCICS, can be used by PRL reports to specify the data held in the T6EUSER field.

> **Note:** CMRCLOCK also sets T6EUSER to the name of the CICS region or SGROUP when multiple CICS regions are combined.

T6ETMID	Contains the number of minutes in the summarization interval. The alias, SUMMINTV, can be used by PRL reports to specify the data held in the T6ETMID field.
T6EPGNM	Contains the WORKLOAD= name. The alias, SUMMWKLD, can be used by PRL reports to specify the data held in the T6EPGNM field.
T6ESTIME	Contains the start time of the interval or the time from the start of data when it is the first interval for a given execution.
T6ETASK	Contains the number of transactions in the summary.
T6EABCD	Contains the number of transactions in the summary that were from type 6D records (abend).
T6EFCNT	Contains the number of files in the summary record, based on the options you specify.
T6EFNnnn	Contains the file type if you specify DETAIL=NO or the actual file name if you specify DETAIL=YES.
T6EFTnnn	Contains the average file time for all requests to the file in T6EFNnnn.

> **Note:** T6EFTnnn does not contain the average time of all transactions. It contains the average time of only those transactions that access the file.

T6EFCnnn	Contains the average file calls for all requests to the file in T6EFNnnn.

> **Note:** T6EFCnnn does not contain the average count for all transactions. It contains the average count for those transactions that accessed the file.

Binary, Time, and Character Fields

When you process CMRDETL records with the CMRSUMD utility, several data types of the resulting summary records vary from the original record as a result of summarization. Summary record fields that contain binary, time, or character data are processed during summarization in the following manner:

Data Type	Summary Records
Binary	Contains the average value for all tasks during the interval.
Time	Contains the average time of all tasks during the interval.
Character	Contains asterisks (*), unless all tasks in the interval are the same. When all tasks in the interval are the same, the original characters are used.

Combining Summarized Records

CMRSUMD can combine summarized records. When you process summarized records, you can combine records from multiple workloads to create a single, new workload. You can also combine summarized records together to create a longer interval than the original records. For example, you can combine data summarized in intervals of 10 minutes into hourly summary records.

Note: When you are processing summarized records, you must select records by time period; for example, if you are combining summarized 10-minute records into hourly records, you must specify

INCLTERM=10

After executing CMRSUMD, the T6ETMID field contains the number of minutes in the summarization interval. This prevents records that overlap the summarization interval from being combined and creating invalid data.

The INCLTERM control statement is explained on page 29.

Part 2. MAINVIEW for CICS Reports

This part describes miscellaneous MAINVIEW for CICS performance reports that you can produce using PERFORMANCE REPORTER.

Chapter 4. Resource Tracking and Analysis Report

The MAINVIEW for CICS resource analysis program (CMRRAPR) creates the Resource Tracking and Analysis report. This report provides information about resource usage by CICS transactions and programs. A report may show summary, detail, or service data for either an individual transaction or program or a combination of transactions or programs.

You select the transactions or programs that appear in the Resource Tracking and Analysis report. You declare how transactions or programs are combined by specifying parameters with the CMRRAPM macro. After you have created the macro statements, they must be assembled and the resulting module cataloged in the load library. If you do not assign a name to the module, the default name CMRRAPM is used.

Note: If a name is assigned to the CMRRAPM table, you can use the TABLE control statement to associate that name to generate the report. Refer to "Report Control Statements" on page 47 for a description of the TABLE control statement.

The remaining sections of this chapter describe the macro assembly statements, JCL, and control statements used to produce a Resource Tracking and Analysis report.

Creating a Resource Tracking and Analysis Report

To create a Resource Tracking and Analysis report, submit the JCL to execute the BBSAMP (CMRRAPR) report program and any associated control statements as a batch job.

The sample job stream shown in Figure 19 produces the Resource Tracking and Analysis report, shown in Figure 21 on page 49.

```
//jobname JOB user parameters
/*JOBPARM user parameters
//JOBLIB   DD  DISP=SHR,DSN=CMR.CMRV5.BBLINK
//CMRRAPR EXEC PGM=CMRRAPR
//SYSOUT   DD  SYSOUT=*
//SYSPRINT DD  SYSOUT=*
//REPORT   DD  SYSOUT=*
//CMRDETL  DD  DISP=SHR,DSN=CMR.CMRV5.CMRDETL
//SORTWK01 DD  UNIT=SYSDA,SPACE=(CYL,(1,1))
//SYSIN DD *
(control statements)
```

Figure 19. Resource Tracking and Analysis Report—Input JCL

The required JCL to produce this report consists of the following statements:

JCL	Use
JOB	Initiates the job.
EXEC	Specifies the name of the program that generates the report (PGM=CMRRAPR).
//JOBLIB	Defines the program library containing the MAINVIEW for CICS load modules (BBLINK).
//CMRDETL	Defines the VSAM data set containing records for each CICS transaction (CMRDETL).
//REPORT	Defines the report output for the predefined reports.
//SORTWK*nn*	Identifies one to nine work data sets that can be defined for CMRRAPR data sorting. *nn* is a numeric value (01-09).
//SYSPRINT	Defines the output class for a sort utility. The name of the DD statement is determined at CICS system generation.
//TAPEIN	Defines the archive data set produced by CMRPURG, described in "Archiving Data (CMRPURG)" on page 11, as input to the report program.
//SYSOUT	Defines the output class.
//SYSIN	Defines PERFORMANCE REPORTER control statements as input to the batch program.

Sample CMRRAPM Macro Assembly Statements

Figure 20 shows an example of BBSAMP (CMRRAPM) macro assembly statements that are needed to create the Resource Tracking and Analysis report.

```
CMRRAPM TYPE=INITIAL
CMRRAPM TYPE=ENTRY,GROUP=xxxxxxxxxxxx,
    MEMBERS=(xxxxxxxx,...,xxxxxxxx), SERVICE=nnn
    (Additional TYPE=ENTRY statements, as needed)
CMRRAPM TYPE=FINAL
END
```

Figure 20. CMRRAPM Macro Assembly Statements

The following list describes each CMRRAPM macro assembly statement.

TYPE=INITIAL
Generates a group of MAINVIEW for CICS modules. This statment must be entered first and placed on a separate line by itself. Specify CMR=YES to create a group that includes all MAINVIEW for CICS transaction IDs (the default); otherwise, specify CMR=NO.

TYPE=ENTRY

Defines one group of transactions or programs and the response time to be compared with the specified service level. One TYPE=ENTRY statement must be specified for each group to be reported, where:

GROUP= Is any 1- to 12-character symbolic identifier for this group.

> **Note:** MAINVIEW for CICS transactions are automatically assigned the group identifier, MAINVIEW for CICS.

MEMBERS= Is the list of transaction IDs or program names (PANL, MAPS, or PSBS, if they have been monitored with the transaction monitor) to be included in this group. A skip character is a plus sign (+), which can be used in IDs or names to indicate generic subgroups of transactions or programs to be included. There is no limit on the number of IDs or names specified. However, a given ID or name can exist in only one group.

SERVICE= Is a service level value to which the response time for each transaction or program is to be compared, expressed in tenths of seconds. The default is 10 (1.0 seconds).

TYPE=FINAL

Ends the generation parameters. It must be the last statement and must be placed on a line by itself.

> **Note:** BBSAMP member CMRASM contains sample code to assemble and link-edit the CMRRAPM module. CMRRAPM must be linked non-reentrant.

Report Control Statements

All control statements are optional. If specified, each statement must begin in column 1.

FROM DATE= Starting date of the data to be included in the report, in mm/dd/yyyy format. If omitted, no data is rejected as too old.

> **Note:** If you specify a date in the old format (mm/dd/yy), yy is interpreted as 19yy.

TO DATE= Ending date of the data to be included in the report, in mm/dd/yyyy format. If omitted, no data is rejected as too new.

> **Note:** If you specify a date in the old format (mm/dd/yy), yy is interpreted as 19yy.

FROM TIME= Starting time of the data to be included in the report, in hh:mm:ss format. If omitted, no data is rejected as too early.

TO TIME= Ending time of the data to be included in the report, in hh:mm:ss format. If omitted, no data is rejected as too late.

SORTWK= Specifies the number of sort work areas to be used. Valid values are 1 to 8. If a value greater than 1 is specified, a corresponding number of DD or DLBL statements must appear in the JCL.

CMRRAPR

INPUT= Identifies the type of input data set to be used; can be specified as either:

    VSAM VSAM data set (the default)
    TAPE Sequential tape or disk file

TYPE= Identifies the type of report to be generated, which can be any one of the following:

    SUMMARY Reports three lines of transaction execution data for each transaction or program by calendar date. This is the default. A sample of this type of report is in Figure 21 on page 49.

    DETAIL Reports three lines of transaction execution data for each transaction or program.

    SERVICE Specifies DETAIL information, but only for transactions or programs that did not meet their service levels.

TABLE= Specifies the module name of the customized CMRRAPM table. The default is CMRRAPM.

Sample Report

An example of the Transaction Resource Tracking and Analysis report is shown in Figure 21. The report is created from the JCL shown in Figure 19 on page 45. A description of the report fields and columns follows Figure 21.

```
                  MAINVIEW for CICS TRANSACTION RESOURCE TRACKING AND ANALYSIS


RUN DATE: 09/24/1999   DATA DATE: 09/24/1999 TO 09/24/1999                      CMRRAPR
RUN TIME: 17:17       DATA TIME: 08:30:00 TO 24:00:00                           PAGE    1
RUN TYPE: SUMMARY

                    AVG.  AVG.  AVG.  AVG. AVG.  CICS/ SERVICE
TASK/PGM    TOTAL NO. AVG.   AVG.  CPU   TASK  I/O  NO. OF FC/DL1 RESP. LEVEL/ FCP  TSP  DL1  JCP  ECB
 ID.   DATE  OF TASKS RESP.  CPU   REAL  WAIT  TIME  I/O  CALLS LOAD PCT/CNT WAIT WAIT WAIT WAIT WAIT
-------- -------- --------- ------- ------- ------- ------- ------- ------ ------ ------ ------- ------ ------ ------ ------ ------
DRGI    09241999    7 :01.226 :00.290 :00.009 :00.936 :00.000    0    0  18.0%   1.0  0.0%  0.0%  0.0%  0.0%  0.0%
                                          0  30.2%  42.8% :00.00 :00.00 :00.00 :00.00 :00.00
                                             3    0    0    0    0    0

DRGI    ******     7 :01.226 :00.290 :00.009 :00.936 :00.000    0    0  18.0%   1.0  0.0%  0.0%  0.0%  0.0%  0.0%
                                          0  30.2%  42.8% :00.00 :00.00 :00.00 :00.00 :00.00
                                             3    0    0    0    0    0
-------------------------------------------------------------
EMNU    09241999    3 :00.054 :00.005 :00.003 :00.049 :00.000    0    0   0.1%   1.0  0.0%  0.0%  0.0%  0.0%  0.0%
                                          0   0.5% 100.0% :00.00 :00.00 :00.00 :00.00 :00.00
                                             3    0    0    0    0    0

EMNU    ******     3 :00.054 :00.005 :00.003 :00.049 :00.000    0    0   0.1%   1.0  0.0%  0.0%  0.0%  0.0%  0.0%
                                          0   0.5% 100.0% :00.00 :00.00 :00.00 :00.00 :00.00
                                             3    0    0    0    0    0
-------------------------------------------------------------
FINC    09241999   12 :00.502 :00.347 :00.005 :00.155 :00.000    0    0  37.0%   1.0  0.0%  0.0%  0.0%  0.0%  0.0%
                                          0  21.2%  92.6% :00.00 :00.00 :00.00 :00.00 :00.00
                                            11    0    0    0    0    0

FINC    ******    12 :00.502 :00.347 :00.005 :00.155 :00.000    0    0  37.0%   1.0  0.0%  0.0%  0.0%  0.0%  0.0%
                                          0  21.2%  92.6% :00.00 :00.00 :00.00 :00.00 :00.00
                                            11    0    0    0    0    0
-------------------------------------------------------------
PROV    09241999   11 :00.173 :00.018 :00.004 :00.155 :00.169    0    0   1.7%   1.0 26.6%  0.0%  0.0%  0.0%  0.0%
                                          0   6.7%  90.9% :00.04 :00.00 :00.00 :00.00 :00.00
                                            10    3    0    0    0    0

PROV    ******    11 :00.173 :00.018 :00.004 :00.155 :00.169    0    0   1.7%   1.0 26.6%  0.0%  0.0%  0.0%  0.0%
                                          0   6.7%  90.9% :00.04 :00.00 :00.00 :00.00 :00.00
                                            16   12    0    0    0    0
-------------------------------------------------------------
RELG    09241999    2 :00.094 :00.093 :00.003 :00.001 :00.000    0    0   1.6%   1.0  0.0%  0.0%  0.0%  0.0%  0.0%
                                          0   0.6% 100.0% :00.00 :00.00 :00.00 :00.00 :00.00
                                             2    0    0    0    0    0

RELG    ******     2 :00.094 :00.093 :00.003 :00.001 :00.000    0    0   1.6%   1.0  0.0%  0.0%  0.0%  0.0%  0.0%
                                          0   0.6% 100.0% :00.00 :00.00 :00.00 :00.00 :00.00
                                             2    0    0    0    0    0
-------------------------------------------------------------
G:PAYROLL         35 :00.363 :00.144 :00.008 :00.219 :00.075    0    1  99.6%        4.7%  0.0%  0.0%  0.0%  0.0%
                                          0  99.8%  89.7% :00.01 :00.00 :00.00 :00.00 :00.00
                                            70   18    0    0    0    0
-------------------------------------------------------------
** SELECTED **    35 :00.363 :00.144 :00.008 :00.219 :00.075    0    1  99.6%        4.7%  0.0%  0.0%  0.0%  0.0%
                                          0  99.8%  89.7% :00.01 :00.00 :00.00 :00.00 :00.00
                                            70   18    0    0    0    0
-------------------------------------------------------------
G:UNSELECTED      27 :00.363 :00.144 :00.008 :00.219 :00.075    1    1  99.6%        4.7%  0.0%  0.0%  0.0%  0.0%
                                          0  99.8%  89.7% :00.01 :00.00 :00.00 :00.00 :00.00
                                            70   18    0    0    0    0
-------------------------------------------------------------
* UNSELECTED *    27 :00.363 :00.144 :00.008 :00.219 :00.075    0    1  99.6%        4.7%  0.0%  0.0%  0.0%  0.0%
                                          0  99.8%  89.7% :00.01 :00.00 :00.00 :00.00 :00.00
                                            70   18    0    0    0    0
-------------------------------------------------------------
GRAND TOTALS      62 :00.363 :00.144 :00.008 :00.219 :00.075    0    1  99.6%        4.7%  0.0%  0.0%  0.0%  0.0%
                                          0  99.8%  89.7% :00.01 :00.00 :00.00 :00.00 :00.00
                                            70   18    0    0    0    0
-------------------------------------------------------------
TRANSACTIONS PER SECOND:  0.00
```

Figure 21. Transaction Resource Tracking and Analysis Report

Report Structure and Conventions

The report shown in is produced by the CMRRAPR program. The report run type, SUMMARY, is printed in the top left corner on line 3 below the date and time fields. A summary report shows a summary of transaction performance in chronological order. A subtotal by transaction ID is marked with asterisks (******) in the DATE column before the next transaction begins. Five transaction IDs are included in this report: DRGI, EMNU, FINC, PROV, and RELG.

A detail report shows performance data for every transaction. A service report is also a type of detail report, except it is limited to transactions or programs that did not meet their service levels. Otherwise, the format of both reports is the same as the summary report shown in .

G:PAYROLL is the name of the group formed by programs DRGI, EMNU, FINC, PROV, and RELG. Values in this row represent the sum of the subtotals reported for DRGI, EMNU, FINC, PROV, and RELG.

The areas marked ** SELECTED ** and * UNSELECTED * show totals for programs whose IDs were either matched (SELECTED) or not matched (UNSELECTED) against the CMRRAPM table. Both program IDs in this report were matched in the table:

- The SELECTED row shows values equal to the combined data for programs DRGI, EMNU, FINC, PROV, and RELG in the G:PAYROLL row.

- The UNSELECTED row shows totals for programs other than the selected programs.

The GRAND TOTALS area shows total counts and percentages for all reported programs. In this report, the GRAND TOTALS field shows the sum of all listed values (SELECTED and UNSELECTED).

The TRANSACTIONS PER SECOND field at the lower left of the report is the average rate calculated for all transactions that occurred during the period that data was collected for the report. This example represents 15.5 hours; thus, the transactions per second are 62 / (15.5 * 60 * 60), or 0.001.

Note: Any count that exceeds the width of its report field is expressed in millions, indicated by an M suffix.

A time that is longer than its report field is forced to a value of 999.999 on the report. The actual time is retained, however, and all values derived from it are maintained correctly.

Column headings in this report are standard; they are described in the following section.

Field Descriptions

TASK/PGM ID

Transaction ID or program name being reported. This field can contain any of the following entries:

- A 4-character transaction ID, unless the selection matches the program name.

- A 1- to 12-character identifier assigned to this group of transactions or programs. This ID is used when subtotals for a group are summarized.

- **SELECTED**, indicating a group of transaction or program IDs that were matched to the CMRRAPM table. This entry is used when a group break is processed.

- *UNSELECTED*, indicating a group of transactions or program IDs that were not matched to the CMRRAPM table. This entry is used when a group break is processed.

- GRAND TOTALS, showing a total for the entire report.

DATE

In a summary report, the Gregorian date of the reported data. The date format is mm/dd/yyyy.

In detail or service reports:

Line 1 shows the Gregorian date of the reported activity.
Line 2 shows the transaction ending time, in hh:mm:ss format.
Line 3 shows the operator identifier that invoked the task or program.

TOTAL NO. OF TASKS

Total number of tasks that reference this task/program.

AVG. RESP.

Average internal response time for this task/program, in seconds.

AVG. CPU

Average elapsed time in seconds that the task was dispatched during each use of this task/program.

AVG. CPU REAL

Average actual CPU time required to execute this task/program, in seconds.

AVG. TASK WAIT

Average wait time of this task/program, in seconds.

AVG. I/O TIME

Average amount of time required to complete an I/O operation, in seconds. (This is the I/O service time experienced by this task/program.)

AVG. NO. OF I/O

Average number of file, journal, temporary storage, and DL/I I/Os issued during the execution of this task/program.

AVG. FC/DLI CALLS

Line 1 shows the average number of file control calls issued during each execution of this task/program.

Line 2 shows the average number of DL/I calls issued during each execution of this task/program.

CICS/RESP. LOAD

Line 1 shows the percentage of CICS CPU used by this task/program.

Line 2 shows the percentage of the total CICS response time used by this task/program.

SERVICE LEVEL/PCT/CNT
Line 1 shows the service level of this task/program.

Line 2 shows the percentage of transactions whose response time met this service level time value.

Line 3 shows the number of transactions whose response time met this service level time value.

FCP WAIT
Line 1 shows the percentage of this task/program's response time that can be attributed to file control access requests.

Line 2 shows the average amount of time attributed to file control access requests, in seconds.

Line 3 shows the total number of file control access requests issued.

TSP WAIT
Line 1 shows the percentage of this task/program's response time attributed to temporary storage access requests.

Line 2 shows the average amount of time attributed to temporary storage access requests, in seconds.

Line 3 shows the total number of temporary storage access requests issued.

DLI WAIT
Line 1 shows the percentage of this task/program's response time attributed to DL/I access requests.

Line 2 shows the average amount of time attributed to DL/I access requests, in seconds.

Line 3 shows the total number of DL/I access requests issued.

JCP WAIT
Line 1 shows the percentage of this task/program's response time attributed to journal control access requests.

Line 2 shows the average amount of time attributed to journal control access requests, in seconds.

Line 3 shows the total number of journal control access requests issued.

ECB WAIT
Line 1 shows the percentage of this task/program's response time attributed to user event control block (ECB) wait requests.

Line 2 shows the average amount of time attributed to ECB wait requests, in seconds.

Line 3 shows the total number of ECB wait requests issued.

Chapter 5. Graphic Histogram Reports

The CMRCHRT member of your BBSAMP data set contains sample JCL and control statements to create histograms from data collected by MAINVIEW for CICS. These reports graphically represent selected CICS resources as horizontal histograms.

Over 260 data elements recorded by MAINVIEW for CICS can be combined to create tabular historical reports and histograms. Using control statements, you select the resources and the type of processing shown in your histograms.

Creating a Histogram Report

The CMRCHRT batch program creates a histogram report. Both the JCL and control statements to run the CMRCHRT program are described in the following sections.

The sample job shown in Figure 22 produces a histogram report for all versions of CICS.

```
//jobname JOB user parameters
/*JOBPARM user parameters
//CMRCHRT EXEC PGM=CMRCHRT
//JOBLIB   DD  DISP=SHR,DSN=CMR.CMRV5.BBLINK
//CMRDETL  DD  DISP=SHR,DSN=CMR.CMRV5.CMRDETL
//CMRSTAT  DD  DISP=SHR,DSN=CMR.CMRV5.CMRSTAT
//TAPEIN   DD  DISP=SHR,DSN=CMR.CMRV5.CMRSTAT
//REPORT   DD  SYSOUT=*
//SORTWK01 DD  UNIT=SYSDA,SPACE=(CYL,(1,1))
//SYSPRINT DD  SYSOUT=*
//SYSOUT   DD  SYSOUT=*
//SYSIN    DD  *
     (control statements)
```

Figure 22. Example JCL to Create Histogram Reports

The JCL to execute the CMRCHRT program consists of the following statements:

JOB	Initiates the job.
EXEC	Specifies the name of the program (PGM=CMRCHRT) that generates the report.
//JOBLIB	Defines the program library containing the MAINVIEW for CICS load modules (BBLINK).
//CMRDETL	Defines the VSAM data set containing T6E detail transaction records.
//CMRSTAT	Defines the VSAM data set or sequential file containing records of CICS operation statistics (CMRSTAT).
//TAPEIN	Defines the sequential disk or tape file containing records of CICS operation statistics (CMRSTAT).
//REPORT	Defines the report output for the predefined reports.

//SORTWK*nn*	Identifies one to nine work data sets that can be defined for CMRCHRT data sorting. Define *nn* as a numeric value from 01 to 09.
//SYSPRINT	Defines the output class for a sort utility. The name of the DD statement is determined at CICS system generation.
//SYSOUT	Defines the output class.
//SYSIN	Defines PERFORMANCE REPORTER control statements as input to the batch program.

CMRCHRT runs with the following restrictions:

- Data must be created from the SMF records selected using CMRSTATC options as follows:

  – GAPPLID or SAPPLID must be used to segregate SMF data by CICS regions into separate files. CMRCHRT cannot select by APPLID.

- Only three class types of CMRCHRT can be run:

  – CLASS=CICS

  – CLASS=APPLICATION

  – CLASS=SERVICE

- INPUT=TAPE and a TAPEIN DD statement pointing to the file are required.

Control Statements

Control statements identify the CICS resources and associated performance statistics that appear in histogram reports. A control statement set is a group of control statement keywords and parameters that specify one histogram report. A set can contain valid keywords in any sequence, but each keyword can be specified only once in each set.

A histogram control statement set is structured as follows:

Structure	Description
keyword=value	Optional; sets up date and time ranges, titles, graph scales, and so on for this report. Defaults are used if these keywords are not specified.
class	One required; specifies the CICS resource appearing in the histogram.
data=type	One required; specifies the type of data appearing in the histogram.
END	Required; ends this report request.

Control statements follow these rules:

- Each control statement must begin in column 1.

- If a control statement keyword appears more than once in a set, only its last specification is used.

- If a control statement keyword is not specified in a set, its default is used.

- Multiple control statement sets can be specified in a single execution of the CMRCHRT program to produce multiple histograms. However, separate jobs must be submitted to produce multiple histograms if report data is on tape (see "Archiving Data (CMRPURG)" on page 11).

- Comments can be added to control statements by leaving at least one blank after the statement and then starting the comment.

- Any statement with an asterisk (*) in column 1 is considered to be a comment and is ignored.

Keyword=value Statements

The following keywords specify the range of data, titles, calculation methods, and scales of each histogram report. If any keyword is omitted, the default is used.

TITLE=
> Specifies the title of the report; up to 60 characters are allowed, including blanks. The default is 60 blanks.

FROM DATE= TO DATE=
> Specifies the date range in mm/dd/yyyy format to select input data. If used, these keywords must be respecified in every control statement set. The defaults are FROM DATE=09/09/0000 and TO DATE=12/31/9999; data from all available dates appears in the histograms.
>
> **Note:** If you specify a date in the old format (mm/dd/yy), yy is interpreted as 19yy.

FROM TIME= TO TIME=
> Specifies the daily time range in hh:mm:ss format to select input data. If used, these keywords must be respecified in every control statement set. The defaults are FROM TIME=00:00:00 and TO TIME=24:00:00; data from all available times appears in the histograms.

MINUTES=
> Length of time the requested file data is to be accumulated, in minutes. The accumulated data is used to create a line of report data. Any value from 1 through 99999 is valid; the default is 1 (minute).
>
> The keywords MINUTES= and APPL=(ALL) are mutually exclusive. For more information about APPL=(ALL), see "Applications Class" on page 57.

BREAK={DAILY|HOURLY|MONTHLY}
> Divides the date and time ranges into fixed report intervals.
>
> The keywords BREAK= and APPL=(ALL) are mutually exclusive. For more information on APPL=(ALL), see "Applications Class" on page 57. Valid values for BREAK= are
>
> **DAILY**   Each day's data starts on a new report page (the default).
>
> **HOURLY**   Each hour's data starts on a new report page.
>
> **MONTHLY**   Each month's data starts on a new report page.

CALC={<u>PERCENT</u>|AVERAGE|TOTAL}
     Specifies the calculation method used to present the data. Valid values are

    PERCENT   Percentages are reported (the default).

    AVERAGE   Averages are reported.

    TOTAL   Total counts are reported.

    Note: The CALC keyword is ignored if you specify DATA=PAGING.

SCALE={100|*nnnnn*|FLOAT}
    Defines histogram scale values. Valid values are

    nnnnn   Specifies the highest scale value. Valid scalar numbers include

        •   From 1 to 99999 for counts.
        •   Up to 100 for percent.
        •   Up to 68700 for time; the default scale is 100.

        Anything beyond the maximum range is truncated.

    FLOAT   Calculates the scale to accommodate the largest reported value.

COMPANY=*name*
    Specifies the company name to be displayed at the top of the histogram. The default is BMC Software.

    Once specified, this parameter remains in effect for the entire program execution or until another COMPANY keyword is encountered.

INPUT={<u>VSAM</u>|TAPE}
    Identifies the organization of the input data set. Valid values are

    VSAM   VSAM data set (the default)

    TAPE   Sequential tape or disk file

    Once specified, this parameter remains in effect either for the entire program execution or until another INPUT keyword is encountered.

    Note: If INPUT=TAPE is specified, you must specify a TAPEIN DD statement in your JCL.

TABLE=*name*
    Specifies the module name of the modified CMRRAPM table to be used by the Applications Class GROUP parameter. TABLE must be specified before the associated GROUP parameter. The default is CMRRAPM. For more information, see "Applications Class" on page 57.

    Once specified, this parameter remains in effect either for the entire program execution or until another TABLE keyword is encountered.

ENDDATA={<u>DATE</u>|FILE}
    Specifies whether end of data should correspond with the TO DATE (ENDDATA=DATE) or end of file (ENDDATA=FILE) keyword. The default is DATE.

    Once specified, this parameter remains in effect for the entire execution of the program or until another ENDDATA keyword is encountered.

ENDDATA is required if input data is

- Selected from an archive tape that contains data merged from multiple CICS regions (see "Archiving Data (CMRPURG)" on page 11)

- Sorted by criteria other than date and time

CLASS and DATA Control Statements

One CLASS and one DATA statement are required for each histogram report. The CLASS control statement identifies the resource to be reported; the DATA statement identifies the data to be graphed for that class. Each CLASS statement has its own set of data types, and only one DATA type can be selected for each histogram report.

Applications Class

The Applications Class control statements identify a specific type of application or group of applications that appear in histogram reports. The format is as follows:

APPL={_name_**|(ALL)}**

where

APPL=   Is any of the following applications:

TRAN=	Transaction name
PROG=	Program name
TERM=	Terminal name
PANL=	DMS panel name
MAPS=	Storage map name
PSBS=	PSB name
GROUP=	A group of transactions or programs defined in the CMRRAPM table specified in the TABLE= parameter

name   Specifies an application name.

(ALL)   Requests all the members in the specified class.

If you specify ALL, it must be enclosed in parentheses.

The keywords MINUTES=, APPL=(ALL), and BREAK= are mutually exclusive. For further information on these keywords, refer to "Keyword=value Statements" on page 55.

One of the following DATA statements must follow the APPL statement, beginning in column 1:

DATA=RESPONSE	Response time
DATA=ALL-WAIT	Total transaction wait time
DATA=CPU	CPU time
DATA=FC-WAIT	File I/O wait time
DATA=FC-IOCNT	Number of file I/Os
DATA=TC-WAIT	Terminal wait time
DATA=TC-IOCNT	Number of terminal I/Os
DATA=JC-WAIT	Journal I/O wait time
DATA=JC-IOCNT	Number of journal I/Os

DATA=TS-WAIT	Temporary storage I/O wait time
DATA=TS-IOCNT	Number of temporary storage I/Os
DATA=ECB-WAIT	User event wait time
DATA=ECB-WCNT	Number of user event wait requests
DATA=SUSPENDT	Suspend wait time
DATA=SUSPENDC	Number of times suspended
DATA=FCPCALLS	Number of file control (FCP) calls or requests
DATA=DLICALLS	Number of DL/I calls
DATA=DL/IWAIT	DL/I I/O wait time
DATA=DL/IOCNT	Number of DL/I I/Os

Service Levels Class

The Service Level Class control statements report about service level performance. The format is

SERVICE

There are no DATA control statements used with the Service Level Class control statement.

CICS System Class

CICS system information is reported, using system data journaled by CICS. The format is

CICS

One of the following DATA control statements must follow the CICS statement, beginning in column 1:

DATA=CICSCPU	Total CICS CPU time and user CPU time
DATA=KCP-CPU	Task control CPU time
DATA=KCP-CPUR	Task control CPU real time
DATA=KCP-CPUC	Task control dispatch count
DATA=TCP-CPU	Terminal control CPU time
DATA=TCP-CPUR	Terminal control CPU real time
DATA=TCP-CPUC	Terminal control dispatch count
DATA=JCP-CPU	Journal control CPU time
DATA=JCP-CPUR	Journal control CPU real time
DATA=JCP-CPUC	Journal control dispatch count
DATA=USERCPU	User CPU time
DATA=USERCPUR	User CPU real time
DATA=USERCPUC	User dispatch count
DATA=PGIN	CICS page-in operations
DATA=PGOT	CICS page-out operations
DATA=PAGING	CICS page-in and page-out rate per second
DATA=TASKRATE	Transaction rate per second

Processing Program Table Class

The Processing Program Table reports about a specific PPT entry or all PPT entries. The format is

PPT={*xxxxxxxx*|(ALL)}

where *xxxxxxxx* is a valid PPT entry name or (ALL), which reports on all the entries in the PPT.

One of the following DATA statements must follow the PPT statement, beginning in column 1:

DATA=USECNT   Number of times a program was used
DATA=FETCH   Number of times a program was fetched from the OS/MVS load library

Note: If the CALC= keyword is specified as CALC=PERCENT and DATA=FETCH is specified here, a FETCH-PERCENT report is produced.

Program Control Table (PCT) Class

The Program Control Table Class control statement reports about a specific PCT entry or all PCT entries. The format is

PCT={*xxxx*|(ALL)}

where *xxxx* is a valid PCT entry name or (ALL), which reports on all the entries in the PCT.

One of the following DATA statements must follow the PCT statement, beginning in column 1:

DATA=USECNT   Transaction usage count
DATA=STGVIOL   Number of storage violations
DATA=ADDSTG   Number of additional storage requests

Note: If the CALC= keyword is specified as CALC=PERCENT and DATA=ADDSTG is specified here, the report shows the percentage of time additional storage was needed.

File Control Table Class

The File Control Table Class control statement reports about a specific FCT entry or all entries. The format is

FCT={*xxxxxxxx*|(ALL)}

where *xxxxxxxx* is a valid FCT entry name. ALL reports on all the entries in the FCT.

One of the following DATA statements must follow the FCT statement, beginning in column 1:

DATA=READ   File READ requests
DATA=READNEXT   File READNEXT requests (BROWSE)
DATA=READ-UPD   File READ FOR UPDATE requests
DATA=UPDATE   File UPDATE requests

DATA=INSERT	File INSERT (add) requests
DATA=DELETE	File DELETE requests
DATA=DATAEXCP	Data component EXCP count
DATA=INDXEXCP	Index component EXCP count
DATA=CI-SPLIT	Count of control interval (CI) splits
DATA=CA-SPLIT	Count of control area (CA) splits

Note: The CALC=PERCENT statement uses file control requests as a divisor. For example, using DATA=DATAEXCP produces a histogram charting the percentage of physical I/O requests in relation to logical I/O requests.

Common System Area Class

The Common System Area Class control statement reports about CSA data. The format is

CSA

One of the following DATA statements must follow the CSA statement, beginning in column 1:

DATA=GETMAINS	Count of GETMAIN requests
DATA=FREEMAIN	Count of FREEMAIN requests
DATA=SOSCNT	Times CICS went short-on-storage (SOS)
DATA=DUMPS	Number of transaction dumps
DATA=ASRA	Number of program checks
DATA=STGWAIT	Number of times transactions waited for storage
DATA=MAXCNT	Number of times CICS maximum task condition was reached
DATA=STGVIOL	Number of storage violations
DATA=DTBLOGS	Number of dynamic transaction log records written
DATA=DTBSPILL	Number of DTB log records that spilled to temporary auxiliary storage (AUX)

Note: The CALC=PERCENT statement uses the total CICS transaction count as a divisor.

Transaction Class Table Class

The Transaction Class Table Class control statements report about a transaction class or all transaction classes. The format is

CSO={*xx*|(ALL)}

where *xx* is any transaction class ID from 1 through 10 or (ALL), which reports on all transaction classes.

One of the following DATA statements must follow the CSO statement, beginning in column 1:

DATA=MAXCNT	Maximum setting for the class
DATA=HWMCNT	High-water mark reached

Destination Control Table Class

The Destination Control Table Class control statements report about one destination ID or all destination IDs. The format is

DCT={*xxxx*|(ALL)}

where *xxxx* is any destination ID or (ALL), which reports on all destination IDs.

The only valid DATA statement allowed following the DCT statement is as follows

DATA=USECNT   Number of times the destination was used

Journal Control Table Class

The Journal Control Table Class control statement reports about one journal number or all journal numbers. The format is

JCT={*xx*|(ALL)}

where *xx* is any journal number from 1 through 99 or (ALL), which reports on all journal numbers.

One of the following DATA statements must follow the JCT statement, beginning in column 1:

DATA=RECCNT	Number of records written
DATA=BLKCNT	Number of blocks written
DATA=FULLCNT	Number of times buffer was full
DATA=SHIFTCNT	Number of buffer shift-ups
DATA=AVEBUF	Average block size written
DATA=MAXBUF	Maximum block size allowed

Note: If the CALC= keyword is set to CALC=PERCENT and DATA=RECCNT is specified here, RECCNT is used as the divisor.

           If CALC=PERCENT and AVEBUF or MAXBUF are specified here, MAXBUF is used as the divisor.

DL/I Class

DL/I Class control statements report about DL/I data. The format is

DLZ

One of the following DATA statements must follow the DLZ statement, beginning in column 1:

DATA=PSBCNT	Number of PSBs in the system
DATA=PSTCNT	Number of PSTs in the system
DATA=DBDCNT	Number of DBDs in the system
DATA=SUSPENDS	Number of suspended tasks
DATA=SCHEDULE	Number of scheduling requests
DATA=MAXCNT	Maximum task count
DATA=DEADLOCK	Number of deadlock occurrences

DATA=DUPPSBS	Number of duplicate PSBs created

Note: These fields use total DL/I transaction count as a divisor when CALC=PERCENT is specified.

DATA=READS	Number of READ requests
DATA=READBUF	Number of READs satisfied by data in the buffer pools
DATA=EXCPIN	Number of input EXCP commands
DATA=EXCPOUT	Number of output EXCP commands
DATA=ALTERS	Number of buffer alterations
DATA=IOERRORS	Number of I/O errors

Note: These fields use total buffer requests as a divisor when CALC=PERCENT is specified.

DATA=GETUNIQ	Number of GET UNIQUE type requests
DATA=GETNEXT	Number of GET NEXT type requests

Note: These fields use total user DL/I calls as a divisor when CALC=PERCENT is specified.

Terminal Control Table Class

The Terminal Control Table Class control statement reports about one terminal or all terminals. The format is

TCT={*xxxx*|(ALL)}

where *xxxx* is any terminal ID or (ALL), which reports on all terminal IDs.

One of the following DATA statements must follow the TCT statement, beginning in column 1:

DATA=INPUTS	Number of times the terminal communicates with CICS
DATA=OUTPUTS	Number of times CICS communicates with the terminal
DATA=TRANSCNT	Number of transactions
DATA=TERMERRS	Number of terminal failures, such as a PROG470 abend
DATA=OPERERRS	Number of application program failures

Note: These fields use TRANSCCNT as a divisor when CALC=PERCENT is specified.

Temporary Storage Table Class

The Temporary Storage Table Class control statement specifies a histogram report that shows the usage of temporary storage data. The format is

TST

One of the following DATA statements must follow the TST statement, beginning in column 1:

DATA=PUTSS	Number of PUT requests (MAIN or AUX)
DATA=PUTSQ	Number of PUTQ requests (MAIN or AUX)
DATA=PUTSA	Number of PUT or PUTQ requests (AUX)
DATA=IOERROR	Number of I/O errors
DATA=EXTENDS	Number of TSGID extensions
DATA=SUSPENDS	Number of suspensions

DATA=COMPRESS	Number of compressions
DATA=AVAILCI	Number of available control intervals
DATA=TOTALCI	Total control intervals in data set
DATA=VIRTHWM	Virtual storage use high-water mark

Note: All of these fields except AVAILCI use the total temporary storage requests as a divisor when CALC=PERCENT is specified; AVAILCI uses TOTALCI as the divisor.

END Statement

The END statement completes a control statement set for a requested histogram report. Control statements for another histogram report can follow an END statement.

An END statement is required for every requested histogram report specified with a control statement set.

Sample Reports

Table 1 lists some sample histogram reports that can be produced with the CMRCHRT program. These reports offer a broad overview of CICS performance and are recommended for tuning purposes. The remainder of this section contains descriptions and illustrations of the sample reports.

Table 1. Sample Histogram Reports

Sample Report Title	Sample Control Statements	Section Reference
Response Time for All Transactions	TRAN=(ALL) DATA=RESPONSE CALC=AVERAGE SCALE=10 END	"Response Time for All Transactions" on page 65
CPU Used by CICS Execution	CICS INPUT=TAPE DATA=CICSCPU CALC=PERCENT MINUTES=60 FROM TIME=08:30:00 TO TIME=17:00:00 END	"CPU Used by CICS Execution" on page 66
CICS Paging Rate/Second	CICS INPUT=TAPE DATA=PAGING MINUTES=60 FROM DATE=3/24/2000 TO DATE=3/24/2000 SCALE=10 END	"CICS Paging Rate/Second" on page 67
CICS Transaction Rate/Second	CICS INPUT=TAPE DATA=TASKRATE CALC=AVERAGE MINUTES=60 SCALE=10 END	"CICS Transaction Rate/Second" on page 68

Response Time for All Transactions

This report shows histograms representing the average response time over the selected interval for all transactions.

Data

By default, all records stored on the CMRDETL data set are used as input to produce histogram reports.

These control statements are specified:

Statement	Description
TRAN=(ALL)	Reports on all transactions.
DATA=RESPONSE	Reports transaction response times.
CALC=AVERAGE	Calculates averages.
SCALE=10	Sets the histogram scale to 10 seconds.
END	Ends the report request.

The report produced by these control statements is shown in Figure 23.

```
                    MAINVIEW for CICS LICENSED PROPERTY OF BMC SOFTWARE
CMRCHRT                     RESPONSE TIME FOR (ALL) TRANSACTIONS                PAGE NUMBER         1
FROM DATE: 08/01/1999 TO: 08/31/1999   MINUTES.: N/A           CALCULATION TYPE.: AVERAGE   RUN DATE.....: 09/25/1999
FROM TIME:  00:00:00 TO:  24:00:00  BREAK...: N/A              AVERAGE VALUE....: 7599.57   RUN TIME.....:  17:39:03
               0.00   1.00   2.00   3.00   4.00   5.00   6.00   7.00   8.00   9.00  10.00
==NAME==       ====TIME=== |---------+---------+---------+---------+---------+---------+---------+---------+---------+---------+
CCMF             0.40 |****   +      +      +      +      +      +      +      +      +
FCD2             5.15 |*********************************************      +      +      +      +
CATD           654.82 |************************************************************************************************
JNL2             0.00 |      +      +      +      +      +      +      +      +      +
CRSQ             0.69 |******  +      +      +      +      +      +      +      +
CXRE             0.63 |******   +      +      +      +      +      +      +      +
CSFU             2.26 |*********************   +      +      +      +      +      +      +
CSGM            29.14 |************************************************************************************************
CEDA             0.00 |      +      +      +      +      +      +      +      +      +
D8CS             4.46 |*************************************      +      +      +      +      +
SMN2             0.46 |****   +      +      +      +      +      +      +      +
CSAC             0.00 |      +      +      +      +      +      +      +      +      +
CSSF             0.00 |      +      +      +      +      +      +      +      +      +
CSPG             0.14 |*      +      +      +      +      +      +      +      +
CSSN             0.58 |*****   +      +      +      +      +      +      +      +
CEMT            69.49 |************************************************************************************************
CEOT             0.30 |***    +      +      +      +      +      +      +      +
CSTA             0.00 |      +      +      +      +      +      +      +      +      +
DISP             2.54 |************************   +      +      +      +      +      +
DLZZ             0.00 |      +      +      +      +      +      +      +      +
DB2              0.00 |      +      +      +      +      +      +      +      +
TSM4            72.64 |************************************************************************************************
TSM5           160.56 |************************************************************************************************
TSM2             0.00 |      +      +      +      +      +      +      +      +      +
TSM8             0.00 |      +      +      +      +      +      +      +      +      +
CECI             0.41 |****   +      +      +      +      +      +      +      +
HST2             0.00 |      +      +      +      +      +      +      +      +
CSKP             1.35 |*************   +      +      +      +      +      +      +
FST2             1.27 |************   +      +      +      +      +      +      +
CECS             0.07 |      +      +      +      +      +      +      +      +
JPH1            10.79 |************************************************************************************************
CQRY             0.47 |****   +      +      +      +      +      +      +      +
STAR           308.43 |************************************************************************************************
CSTT             1.82 |******************* +      +      +      +      +      +      +
CSST             0.00 |      +      +      +      +      +      +      +      +
==NAME==       ====TIME=== |---------+---------+---------+---------+---------+---------+---------+---------+---------+---------+
               0.00   1.00   2.00   3.00   4.00   5.00   6.00   7.00   8.00   9.00  10.00
```

Figure 23. Response Time for All Transactions

CPU Used by CICS Execution

This report shows histograms representing the hourly average percent CPU usage by CICS.

Data

By default, all records on the CMRSTAT data set are used to produce histogram reports. In this example, the histogram is limited to data collected during work hours 8:30 am to 4:30 pm.

These control statements are specified:

Statement	Description
CICS	Reports on CICS system data.
INPUT=TAPE	Using sequential CMRSTAT data set.
DATA=CICSCPU	Reports CICS and user CPU time usage.
MINUTES=60	Accumulates data for 60-minute periods.
FROM TIME=08:30:00	Uses data starting at 8:30 am.
TO TIME=17:30:00	Uses data ending at 5:30 pm.
END	Ends the report request.

The report produced by these statements is shown in Figure 24.

```
:litdata.
                MAINVIEW FOR CICS LICENSED PROPERTY OF BMC SOFTWARE
CMRCHRT                          CPU USED BY CICS EXECUTION              PAGE NUMBER        1
FROM DATE: 09/17/1999 TO: 09/17/1999   MINUTES.: 00060        CALCULATION TYPE.: PERCENT   RUN DATE.....: 09/28/1999
FROM TIME:  08:30:00 TO:  17:30:00   BREAK...: DAILY          AVERAGE VALUE....:  1.99  RUN TIME.....:  18:09:04
             0.00   10.00   20.00   30.00   40.00   50.00   60.00   70.00   80.00   90.00  100.00
MM/DD/YYYY HH:MM  ==PERCENT==|---------+---------+---------+---------+---------+---------+---------+---------+---------+---------+
09/17/1999 08:34     2.04 |**    +       +       +       +       +       +       +       +       +
09/17/1999 09:34     2.77 |U*    +       +       +       +       +       +       +       +       +
09/17/1999 10:34     5.22 |UUU** +       +       +       +       +       +       +       +       +
09/17/1999 11:34     7.97 |UUUUUKT +     +       +       +       +       +       +       +       +
09/17/1999 12:24     3.04 |U**   +       +       +       +       +       +       +       +       +
09/17/1999 13:24     2.41 |U*    +       +       +       +       +       +       +       +       +
09/17/1999 14:24     2.00 |**    +       +       +       +       +       +       +       +       +
09/17/1999 15:35    44.06 |UUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUU*   +       +       +       +       +
09/17/1999 16:34    10.90 |UUUUUUKKT*   +       +       +       +       +       +       +       +
09/17/1999 17:30     6.93 |UUUKTT  +     +       +       +       +       +       +       +       +
MM/DD/YYYY HH:MM  ==PERCENT==|---------+---------+---------+---------+---------+---------+---------+---------+---------+---------+
             0.00   10.00   20.00   30.00   40.00   50.00   60.00   70.00   80.00   90.00  100.00
 LEGEND:  K = KCP-CPU  T = TCP-CPU  J = JCP-CPU  U = USER-CPU  * = CICS-CPU
:elitdata.
```

Figure 24. CPU Used by CICS Execution

An asterisk (*) represents the combined total when it exceeds the graphed total due to truncation of stacked values.

CICS Paging Rate/Second

This report shows histograms representing the paging activity caused by CICS execution.

Data

One day's worth of input is used from the CMRSTAT data set.

These control statements are specified:

Statement	Description
CICS	Reports on CICS system data.
INPUT=TAPE	Using sequential CMRSTAT data set.
DATA=PAGING	Uses CICS paging data.
MINUTES=60	Accumulates data for 60-minute periods.
FROM DATE=09/17/1999	Selects data starting on September 17, 1999.
TO DATE=09/17/1999	Does not select data after September 17, 1999.
SCALE=10	Sets the histogram scale to 10 seconds.
END	Ends the report request.

The report produced by these statements is shown in

```
:litdata.
                MAINVIEW FOR CICS LICENSED PROPERTY OF BMC SOFTWARE
CMRCHRT                       CICS PAGING RATE/SEC. (PAGE-IN + PAGE-OUT)          PAGE NUMBER          1
FROM DATE: 09/27/1999 TO: 09/27/1999  MINUTES.: 00060           CALCULATION TYPE.: RATE     RUN DATE.....: 09/17/1999
FROM TIME:  00:00:00 TO:  24:00:00  BREAK...: DAILY             AVERAGE VALUE....:  0.00   RUN TIME.....:  18:53:18
                   0.00    1.00    2.00    3.00    4.00    5.00    6.00    7.00    8.00    9.00   10.00
MM/DD/YYYY HH:MM  =RATE/SEC.= |---------+---------+---------+---------+---------+---------+---------+---------+---------+---------+
09/17/1999 07:39     0.00 |      +       +       +       +       +       +       +       +       +       +
09/17/1999 08:39     0.00 |      +       +       +       +       +       +       +       +       +       +
09/17/1999 09:39     0.02 |I*     +       +       +       +       +       +       +       +       +
09/17/1999 10:39     0.09 |IIIIIIOOO+      +       +       +       +       +       +       +
09/17/1999 12:04     0.30 |IIIIIIIIIIIIIIIIIIOOOOOOOOOOOO*      +       +       +       +       +       +
09/17/1999 13:04     0.16 |IIIIIIIIIIOOOOOO*  +      +       +       +       +       +       +
09/17/1999 14:05     0.32 |IIIIIIIIIIIIIIIIIIIOOOOOOOOOOOOOO      +       +       +       +       +       +
09/17/1999 15:05     0.05 |IIIOO   +       +       +       +       +       +       +       +
09/17/1999 16:05     0.11 |IIIIIIOOOOOO    +       +       +       +       +       +       +
09/17/1999 17:05     0.00 |      +       +       +       +       +       +       +       +       +
09/17/1999 18:05     0.00 |      +       +       +       +       +       +       +       +       +
MM/DD/YYYY HH:MM  =RATE/SEC.= |---------+---------+---------+---------+---------+---------+---------+---------+---------+---------+
                   0.00    1.00    2.00    3.00    4.00    5.00    6.00    7.00    8.00    9.00   10.00
 LEGEND:  I = CICS-PAGE-IN  O = CICS-PAGE-OUT  * = CICS-PAGE-IN + CICS-PAGE-OUT
:elitdata.
```

Figure 25. CICS Paging Rate/Second (Page-in + Page-out)
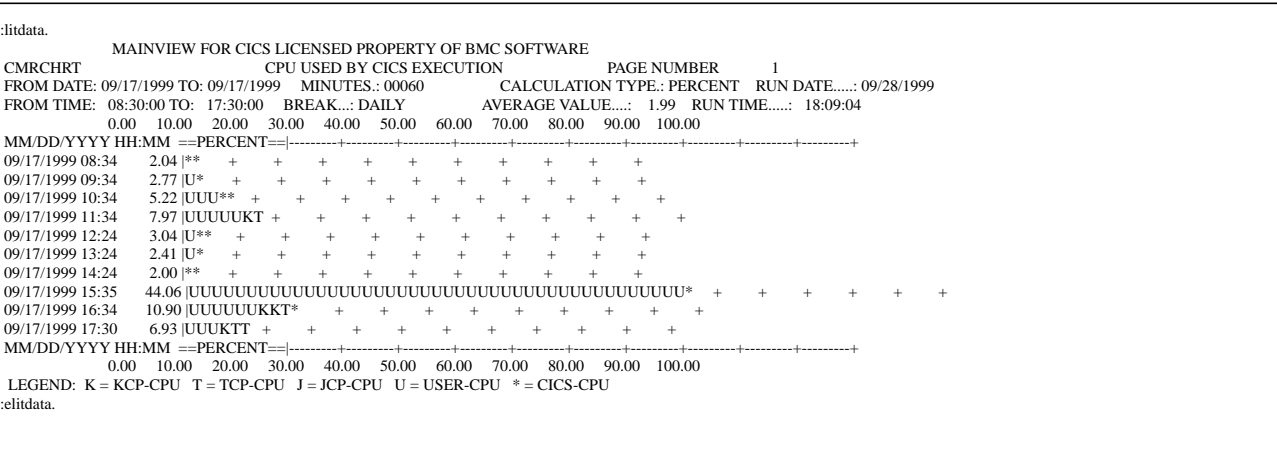
An asterisk (*) represents the combined total when it exceeds the graphed total due to truncation of stacked values.

CICS Transaction Rate/Second

This report shows histograms representing the average transaction rate per second over the selected interval.

Data

By default, all records on the CMRSTAT data set are used as input to produce histogram reports.

These control statements are specified:

Statement	Description
CICS	Reports on CICS system data.
INPUT=TAPE	Using sequential CMRSTAT data set.
DATA=TASKRATE	Reports transaction rate per second.
CALC=AVERAGE	Calculates averages.
MINUTES=60	Accumulates data for 60-minute periods.
SCALE=10	Sets the histogram scale to 10 seconds.
END	Ends the report request.

The report produced by these control statements is shown in Figure 26.

```
:litdata.
                  MAINVIEW FOR CICS LICENSED PROPERTY OF BMC SOFTWARE
CMRCHRT                       CICS TRANSACTION RATE/SECOND                    PAGE NUMBER       1
FROM DATE: 08/01/1999 TO: 08/31/1999  MINUTES.: 00060          CALCULATION TYPE.: RATE     RUN DATE.....: 09/03/1999
FROM TIME:  00:00:00 TO:  24:00:00  BREAK...: DAILY            AVERAGE VALUE....:  0.02  RUN TIME.....:  07:13:49


            0.00    1.00    2.00    3.00    4.00    5.00    6.00    7.00    8.00    9.00   10.00
MM/DD/YYYY HH:MM  =RATE/SEC.= |---------+---------+---------+---------+---------+---------+---------+---------+---------+---------+
08/25/1999 09:28    0.3 |TTT     +       +       +       +       +       +       +       +       +
08/25/1999 10:28    0.2 |TT      +       +       +       +       +       +       +       +       +
08/25/1999 11:28    0.2 |TT      +       +       +       +       +       +       +       +       +
08/25/1999 12:28    0.5 |TTTTT   +       +       +       +       +       +       +       +       +
08/25/1999 13:28    0.3 |TTT     +       +       +       +       +       +       +       +       +
08/25/1999 14:28    0.2 |TT      +       +       +       +       +       +       +       +       +
08/25/1999 15:28    0.2 |TT      +       +       +       +       +       +       +       +       +
08/25/1999 16:28    0.4 |TTTT    +       +       +       +       +       +       +       +       +
08/25/1999 17:28    0.2 |TT      +       +       +       +       +       +       +       +       +
MM/DD/YYYY HH:MM  =RATE/SEC.= |---------+---------+---------+---------+---------+---------+---------+---------+---------+---------+
            0.00    1.00    2.00    3.00    4.00    5.00    6.00    7.00    8.00    9.00   10.00

 LEGEND:  T = TERMINAL-ATTACHED-TRANSACTION-RATE    * = TOTAL-TRANSACTION-RATE
:elitdata.
```

Figure 26. CICS Transaction Rate/Second

Chapter 6. Service Level Analysis Report

The Service Level Analysis report shows the distribution of transaction response times over a range of service levels (specified by the SERVICE statement in the CMRSOPT table). This report can be used to monitor the hourly distribution of transactions response times. JCL and a sample Service Level Analysis report are described in the following sections.

Creating a Service Level Analysis Report

Figure 27 shows the JCL to execute the CMRLTXR program as a batch job and create the Service Level Analysis report. The JCL statements are described following Figure 27.

```
//jobname JOB user parameters
/*JOBPARM user parameters
//CMRLTXR EXEC PGM=CMRLTXR
//JOBLIB   DD  DISP=SHR,DSN=CMR.CMRV5.BBLINK
//CMRSTAT  DD  DISP=SHR,DSN=CMR.CMRV5.CMRSTAT
//REPORT   DD  SYSOUT=*
//SORTWK01 DD  UNIT=SYSDA,SPACE=(CYL,(1,1))
//SYSPRINT DD  SYSOUT=*
//SYSOUT   DD  SYSOUT=*
//SYSIN    DD  *
```

Figure 27. Service Level Analysis Report—Input JCL

JOB	Initiates the job.
EXEC	Specifies the name of the program (PGM=CMRLTXR) that generates the Service Level Analysis report.
//JOBLIB	Defines the program library containing the MAINVIEW for CICS load modules (BBLINK).
//CMRSTAT	Defines the VSAM or sequential data set containing records of CICS operational statistics (CMRSTAT).
//REPORT	Defines the report output for the predefined reports.
//SORTWK*nn*	Identifies one to nine work data sets that can be defined for data sorting. Define *nn* as a numeric value from 01 to 09.
//SYSPRINT	Defines the output class for a sort utility. The name of the DD statement is determined at CICS system generation.
//SYSOUT	Defines the output class.
//SYSIN	Defines optional control statements.

Control Statements

Control statements identify the CICS regions and date of the input records that create the Service Level Analysis report. Valid control statements are

TARGET=_cics_region_

Name of the CICS region whose input records are used to create the report.

DATE=_mm/dd/yyyy_

Date the records that are used in the report were created.

You can specify the starting date using a relative format that is an offset from the current date. For example, to start the selected records with yesterday's date, specify

DATE=*-1

Note: If you specify a date in the old format (mm/dd/yy), yy is interpreted as 19yy.

Sample Report

Figure 28 shows an example of the Service Level Analysis report. Transactions are shown in hourly intervals by counts and percentage for each service level range.

```
                    MAINVIEW for CICS SERVICE LEVEL ANALYSIS
RUN DATE: 09/17/1999                                         PAGE:    1
RUN TIME:  18:53:39                                         CMRLTXR
             0.0  0.5  1.0  1.5  2.0  2.5  3.0  4.0  5.0  6.0  7.0  8.0  9.0 10.0 20.0 30.0 60.0 90.0
 INTVL INTVL TOTAL THRU THRU THRU THRU THRU THRU THRU THRU THRU THRU THRU THRU THRU THRU THRU THRU AND
 DATE  TIME  TRANS. 0.5  1.0  1.5  2.0  2.5  3.0  4.0  5.0  6.0  7.0  8.0  9.0 10.0 20.0 30.0 60.0 90.0 OVER
-------- ----- -------- ----- ----- ----- ----- ----- ----- ----- ----- ----- ----- ----- ----- ----- ----- ----- ----- -----
09171999 16:01  1807
SERVICE COUNTS :  1547 214   28    9    6    2    0    1    0    0    0    0    0    0    0    0    0    0
CUMULATIVE CNTS:     1547 1761 1789 1798 1804 1806 1806 1806 1807 1807 1807 1807 1807 1807 1807 1807 1807 1807
SERVICE PERCENT:     85.6 11.8  1.5  0.5  0.3  0.0  0.0  0.1  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0
CUMULATIVE PCTS:     85.6 97.4 98.9 99.4 99.7 99.8 99.8 99.8 99.9 99.9 99.9 99.9 99.9 99.9 99.9 99.9 99.9 99.9
-------------------------------------------------------------------
09171999 17:01    29
SERVICE COUNTS :    24    3    0    0    0    2    0    0    0    0    0    0    0    0    0    0    0    0
CUMULATIVE CNTS:     24   27   27   27   27   29   29   29   29   29   29   29   29   29   29   29   29   29
SERVICE PERCENT:     82.8 10.3  0.0  0.0  0.0  6.9  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0
CUMULATIVE PCTS:     82.8 93.1 93.1 93.1 93.1 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0
-------------------------------------------------------------------
09171999 18:01     3
SERVICE COUNTS :     0    0    0    0    0    0    0    1    0    1    0    0    0    0    0    0    1    0
CUMULATIVE CNTS:      0    0    0    0    0    0    0    1    1    2    2    2    2    2    2    2    3    3
SERVICE PERCENT:     0.0  0.0  0.0  0.0  0.0  0.0  0.0 33.3  0.0 33.3  0.0  0.0  0.0  0.0  0.0  0.0 33.3  0.0
CUMULATIVE PCTS:     0.0  0.0  0.0  0.0  0.0  0.0  0.0 33.3 33.3 66.6 66.6 66.6 66.6 66.6 66.6 66.6 99.9 99.9
```

Figure 28. Service Level Analysis Report

Field Descriptions

The following list describes the fields of the Service Level Analysis report shown in .

INTVL DATE
> Gregorian date of the data in mm/dd/yyyy format

INTVL TIME
> Time stamp of the data in hh:mm format

TOTAL TRANS.
> Total number of terminal attached transactions executed during this time interval

0.0 THROUGH 0.5 – 90.0 AND OVER
> Service level ranges in seconds; you can adjust service level ranges (see the description of the CMRSOPT macro in the *MAINVIEW for CICS Customization Guide* for additional information)

SERVICE COUNTS
> Number of transactions completed within the service level specified in the column heading

CUMULATIVE CNTS
> Cumulative number of transactions completed within the service level specified in the column heading

SERVICE PERCENT
> Percentage of all transactions completed within the service level specified in the column heading

CUMULATIVE PCTS
> Cumulative percentage of transactions completed within the service level specified in the column heading

CMRLTXR

Part 3. COBOL and SAS Reports

This part describes how to use PERFORMANCE REPORTER and MAINVIEW for CICS detail transaction records to create COBOL and SAS reports.

Chapter 7. COBOL Reports

The PERFORMANCE REPORTER's CMRFRED facility allows COBOL programs to access transaction records stored on the CMRDETL data set. CMRFRED reads CMRDETL transaction records and reformats the fields into a COBOL-compatible format. The reformatted records are then passed back to the COBOL program that originally requested the data. You can produce either standard or custom COBOL reports from the reformatted transaction data.

In addition to the CMRFRED facility, the MAINVIEW for CICS BBSAMP data set contains sample COBOL interface programs. These programs create a variety of predefined MAINVIEW for CICS reports after they have been edited to meet your site's conditions.

These programs must be compiled and linked before they can be run. You should be able to modify these sample programs if you have some COBOL programming experience.

This chapter

- Describes how CMRDETL transaction records are accessed and reformatted

- Provides JCL examples that explain how to compile, link, and run sample COBOL programs

- Explains how to modify sample programs to create customized COBOL reports

- Describes the controls statements used to create COBOL reports.

- Provides an example of each predefined report and a description of its fields.

Note: All COBOL report programs must be re-compiled and re-link edited using the current version of the MAINVIEW for CICS libraries. This step ensures that the copy books for the current Type 6E record format are incorporated into the programs.

Accessing Detail Transaction Records

All data fields in detail transaction records are accessible to COBOL programs. CMRDETL record fields are described in Appendix B, "CMRDETL: Transaction Detail Records" on page 173.

The following COBOL subprograms access CMRDETL records:

Program	Description
CMRFRED	Converts CMRDETL record fields to a recognizable COBOL format. CMRFRED calls the CMRCMPR program to decompress the records that are compressed in the CMRDETL data set.
CMRCOBCP	The communication with CMRFRED is defined in COPYBOOK CMRCOBCP, which describes the format of a CMRDETL record.

The following sections describe these COBOL subprograms.

CMRFRED Subprogram

The CMRFRED subprogram

- Reads CMRDETL records from a VSAM or sequential data set. The maximum input record block size is 32K. The input data set can contain any record types produced by MAINVIEW for CICS, but only CMRDETL records are passed to the calling COBOL program.

- Reformats CMRDETL record fields into a COBOL-compatible form.

When reading records from the CMRDETL data set, CMRFRED

- Calls CMRCMPR to decompress a CMRDETL record
- Converts record fields to a COBOL-compatible format
- Passes a return code back to the calling COBOL program

Parameters

Two parameters are passed from a COBOL program to the CMRFRED subprogram:

- The first parameter defines the function to be performed.
- The second parameter defines the CMRDETL record to be passed back to the calling program.

CMRFRED FT Messages

The CMRFRED subprogram generates FT messages. You can display descriptions of the messages by using the General Service, MESSAGES service, or by browsing the MAINVIEW for CICS BBMLIB data set.

CMRFRED generates any of the following FT messages:

Message	Description
FT256	Cancels the job if a VSAM open, close, or read operation receives a non-zero return code.
FT257	Cancels the job when

- The COBOL function passed to CMRFRED is invalid
- A read or close operation is requested and the file is closed
- The function is open and the file is open

FT258	Cancels the job because of an end-of-file error.
FT260	Cancels the job if program CMRFRED cannot load program CMRCMPR.
FT261	Cancels the job if program CMRCMPR passes a non-zero return code to CMRFRED.

CMRCOBCP (COBOL Copybook) Subprogram

The COBOL copybook contains the formats of the records held in the CMRDETL data set. CMRFRED passes the CMRDETL records to the calling COBOL program. The COBOL copybook is in member CMRCOBCP of the BBSAMP data set.

CMRCOBCP defines three COBOL 01 data structures:

- CMR-CONTROL
- CMRDETL
- COPYRIGHT

The purpose of these data structures is explained in the following sections.

CMR-CONTROL

The CMR-CONTROL data structure passes control fields between CMRFRED and the executing COBOL program.

CMR-CONTROL contains the following fields:

Field	Description
Status	Defined with a COBOL 88-level name to indicate end of file.
Function	Defines the operation to be performed in CMRFRED.

CMRDETL

CMRDETL contains the COBOL-compatible definitions of the record fields. The COBOL versions of CMRDETL records use the same field names described in Appendix B, "CMRDETL: Transaction Detail Records" on page 173.

Note: Because of COBOL's processing requirements, the definitions of the data types associated with the record fields vary from the descriptions given in Appendix B, "CMRDETL: Transaction Detail Records".

COBOL CMRDETL field formats are as follows:

Field	Format
Numeric	Packed decimal
Time	Seconds
TYPE	Two bytes: 6D or 6E
T6EQUAL	Two bytes, packed decimal

COPYRIGHT

The COPYRIGHT data structure contains a copyright statement. The copyright also appears in the compiled COBOL object program.

Customizing Sample COBOL Reports

You can fulfill virtually any need your site has for specialized reports using the COBOL interface. The sample COBOL programs use batch processing to create CICS performance reports.

You can use the sample programs to

- Generate the sample reports using your data
- Develop your own COBOL programs

Once you understand how these sample COBOL programs create reports, you can write your own programs to create CICS performance reports from CMRDETL records.

Note: Use of these sample programs requires an understanding of COBOL programming.

The following sections explain how to modify a sample COBOL program, including

- Copying and modifying the sample program
- Compiling and linking the program
- Executing the program

Copying and Modifying the Program

To modify a sample COBOL program:

1. Copy the sample program. (Sample COBOL programs are listed in .)

2. Copy the standard compile and link JCL from your library. If you do not have standard compile and link JCL, member CMRCOBJ1 in your BBSAMP data set contains samples of compile and link JCL that can be used with the sample COBOL programs.

3. Modify the compile and link JCL according to your site standards.

Compiling and Linking the Program

To compile and link the program you modified:

1. Submit the JCL to compile and link the sample program.

2. Verify successful compilation and linking.

3. If you have any JCL errors, make the corrections and resubmit the job.

Note: Be sure to compile and link the program using the current version of the MAINVIEW for CICS libraries. This step ensures that the copy books for the current Type 6E record format are incorporated into the programs.

Running the Program

To run the program:

1. Copy the sample JCL from member CMRCOBJ2. (The JCL is explained in "CMRCOBJ2—Sample Execution JCL" on page 81.)

2. Modify the JCL according to your site standards.

3. Enter the control statements you need to limit the input to the program (on the CARDIN DD statement), using your site standards.

4. Submit the job to run the sample program.

5. Verify successful completion.

6. If you have any JCL errors, make the corrections and resubmit the job.

Note: Be sure to run the program using the current version of the MAINVIEW for CICS libraries.

Sample Programs

There are two types of sample COBOL programs: transaction and file analysis.

The transaction programs create reports that list performance statistics by the transactions recorded in a CICS region:

• Performance Analysis reports contain CICS performance statistics that are summarized with control breaks by

Transaction ID
Program name
Terminal ID
Node name
User ID

• Rogues Report lists transactions with the longest response times.

• Abended Transaction Report lists all transactions that abended in a CICS region.

The file analysis program has control breaks based on the file name field of transaction records. This program creates the File Analysis for All Files report, which lists wait time for CICS files by CICS region.

Table 2 on page 80 identifies the sample COBOL programs and their associated reports. The table also includes a reference to a section in this book that shows an example of the COBOL report.

COBOL

Table 2. Sample COBOL Programs

Sample Report	Sample Library Member/Program Name	Description	Reference
Performance Analysis for All Transactions	CMRCOB11	Produces a report that evaluates task performance by transaction ID.	"Performance Analysis for All Transactions Report (CMRCOB11)" on page 84
Performance Analysis for All Programs	CMRCOB12	Produces a report with control breaks based on the T6EPGNM field. It is useful for evaluating task performance when a Fourth Generation Language (4GL) is used.	"Performance Analysis by Program Report (CMRCOB12)" on page 85
Performance Analysis by Terminal	CMRCOB13	Produces a report that evaluates task performance by terminal ID.	"Performance Analysis by Terminal Report (CMRCOB13)" on page 86
Performance Analysis by Netname	CMRCOB14	Produces a report that evaluates task performance by VTAM symbolic node name.	"Performance Analysis by Netname Report (CMRCOB14)" on page 87
Performance Analysis for All Users	CMRCOB15	Produces a report that evaluates task performance by user ID.	"Performance Analysis for All Users Report (CMRCOB15)" on page 88
File Analysis for All Files	CMRCOB21	Produces a report that evaluates file performance by file name.	"File Analysis for All Files Report (CMRCOB21)" on page 89
Rogues Report	CMRCOB23	Produces a report that lists the 100 tasks that have the longest response times.	"Rogues Report (CMRCOB23)" on page 90
Abended Transaction Report	CMRCOB25	Produces a report that lists all transactions that suffered an abend.	"Abended Transaction Report (CMRCOB25)" on page 91

CMRCOBJ2—Sample Execution JCL

The JCL shown in Figure 29 is in member CMRCOBJ2 of your BBSAMP data set. CMRCOBJ2 runs the sample COBOL programs described in Table 2 on page 80. You must include the program name with the EXEC statement to run a specific sample report program or to run your own COBOL report program.

```
//*
//*  CMRCOBJ2
//*
//*  THIS IS SAMPLE EXECUTION JCL.
//*  THIS JCL MUST BE MODIFIED BEFORE USE.
//*  THE LOAD LIBRARY MUST BE DEFINED IN THE STEPLIB DD STATEMENT.
//*  THE CMRDETL FILE MUST BE DEFINED.
//*  THE CMRDETL FILE MAY BE A VSAM OR SEQUENTIAL DATA SET.
//*  THE CMRDETL FILE HAS A MAXIMUM BLOCK SIZE OF 32K.
//*
//* EXEC
//CMRCOB00 EXEC PGM=CMRCOB00,REGION=3096K
//STEPLIB  DD  DSN=SYS1.VSCOBII.SYS.COB2LIB,DISP=SHR
//       DD  DSN=.....BBLINK,DISP=SHR
//SORTWK01 DD  UNIT=SYSDA,SPACE=(CYL,(5,5))
//SORTWK02 DD  UNIT=SYSDA,SPACE=(CYL,(5,5))
//SORTWK03 DD  UNIT=SYSDA,SPACE=(CYL,(5,5))
//CMRDETL  DD  DISP=SHR,DSN=CMR.CMRV5.CMRDETL
//CARDIN   DD  *
//REPORT   DD  SYSOUT=*
//SYSABOUT DD  SYSOUT=*
//SYSOUT   DD  SYSOUT=*
//SYSPRINT DD  SYSOUT=*
//
```

Figure 29. JCL Execution Statements for All COBOL Reports

The sample JCL contains the following statements:

JCL	Use
JOB	Initiates the job.
EXEC	Specifies the name of the program that creates the report (PGM=).

Program Name	Report Generated
CMRCOB11	Transaction Analysis for All Transactions
CMRCOB12	Transaction Analysis by Program
CMRCOB13	Transaction Analysis by Terminal
CMRCOB14	Transaction Analysis by Node Name
CMRCOB15	Transaction Analysis by User ID
CMRCOB21	File Analysis for All Files
CMRCOB23	Rogues Report
CMRCOB25	Abended Transaction

JCL	Use
//STEPLIB	Defines your program library and the MAINVIEW for CICS load modules.
//SORTWK01	Defines the first sort area data set.
//SORTWK02	Defines the second sort area data set.

//SORTWK03	Defines the third sort area data set.
//CMRDETL	Defines VSAM or sequential data sets containing T6E detail transaction records.
//CARDIN	Defines PERFORMANCE REPORTER control statements to use as input to the report program. Some examples of control statements are as follows:

Control Statement	Description
CICS=	Provides the CICS region name (for example, CICS=cicsprod).
DATE=	Provides the start date for processing in the format *yyyymmdd* (for example, DATE=19990917).
TIME=	Provides the start time for processing in the format *hhmmss* (for example, TIME=081133).

//REPORT	Defines the report output for the predefined reports.
//SYSABOUT	Defines the abbreviated dump data set.
//SYSOUT	Defines the output class.
//SYSPRINT	Defines the output class for the sort utility. The name of the DD statement is determined at sort system generation.

COBOL Report Fields

The following column headings appear in all sample COBOL reports described in this chapter:

CICS REGION
Name of the CICS region associated with the data.

RUN DATE
Gregorian date associated with the data in yyyy/mm/dd format.

TRAN CODE
Transaction identification of the T6ECICS task.

PROGRAM NAME
Name of the program associated with the data.

TERM ID
Identification number of the terminal.

NETNAME
Name of the net node.

USER ID
Identification of the CICS user.

FILE NAME

Name of the file being accessed.

RUN TIME

Time associated with the data in hh:mm:ss format.

ABEND CODE

Code associated with this abended transaction.

TRAN COUNT

Number of transactions executed from this terminal.

AVERAGE CPU REAL

Average amount of CPU real time used by each transaction (in seconds).

AVG FILE WAIT TIME

Average time that a transaction waits for called files (in seconds).

AVG FILE CALLS

Average number of times files were called for each transaction.

AVG DB WAIT TIME

Average time that a transaction waited for access to a database.

AVG DB CALLS

Average number of calls to the database for each transaction.

AVERAGE STRG HWM

Average storage high-water mark in bytes during this time interval.

STORAGE OCCUPANCY

Usage of storage over time. A value of 1 is equivalent to 250 bytes held for .25 seconds. This value can be used to evaluate the impact on available storage caused by a transaction.

AVG PROG STRG HWM

Average program storage high-water mark reached, in bytes, for all transactions.

Performance Analysis for All Transactions Report (CMRCOB11)

The CMRCOB11 sample program produces the Performance Analysis for All Transactions report. This report has control breaks based on the T6ETRID (transaction ID) field.

Generate this report to evaluate task performance subdivided by transaction.

Sample Report

```
PROGRAM: CMRCOB11              PERFORMANCE ANALYSIS FOR ALL TRANSACTIONS            DATE: 1999/09/17
                                           TIME:  16:06:33
                                           PAGE:     1
  CICS      TRAN    TRAN AVERAGE  AVERAGE  AVG FILE AVG FILE   AVG DB   AVG DB  AVERAGE  STORAGE AVG PROG
 REGION  RUN DATE   CODE COUNT RESPONSE CPU REAL WAIT TIME   CALLS  WAIT TIME   CALLS STRG HWM OCCUPANCY STRG HWM
-------- ---------- ------- ------- -------- --------- -------- --------- -------- -------- --------- --------

PRODCICS 1999/09/17 MATD       1   .369    .018    .000    .000    .000    .000   8,360      31  16,232
PRODCICS 1999/09/17 PC00     161   .017    .001    .000    .000    .000    .000   4,913       0     752
PRODCICS 1999/09/17 RXD2       1   .937    .007    .000    .000    .000    .000   5,744      78     784
PRODCICS 1999/09/17 TSFU       1  1.570    .008    .000    .000    .000    .000   6,000     131     544
PRODCICS 1999/09/17 TSGM       1   .986    .007    .000    .000    .000    .000   6,568      85   1,632
PRODCICS 1999/09/17 MC01       6   .056    .006    .000    .000    .000    .000   5,976       5   3,016
PRODCICS 1999/09/17 MC02       2   .323    .007    .000    .000    .000    .000   6,924     265   7,384
PRODCICS 1999/09/17 MC00       1   .354    .038    .000    .000    .000    .000   5,744      29   3,664
PRODCICS 1999/09/17 DSNC     311   .015    .001    .000    .000    .000    .000   6,416       1   7,752
PRODCICS 1999/09/17 FITX     161   .041    .001    .014   2.180    .000    .000  10,314       3   8,337
PRODCICS 1999/09/17 NN02       1   .002    .001    .000    .000    .000    .000   6,856       0   4,616
PRODCICS 1999/09/17 MCP2       1  5.066    .013    .018   1.000    .000    .000  81,704   3,579 152,952
PRODCICS 1999/09/17 MC00      24  3.177    .048    .004   1.125   1.581  12.250  79,683   3,612 190,087
PRODCICS 1999/09/17 *TOTAL*  672   .150    .003    .003    .563    .056    .437   9,717     137  12,872

PRODCICS 1999/09/23 MATD       1   .373    .019    .000    .000    .000    .000   8,360      31  16,232
PRODCICS 1999/09/23 PC00     738   .025    .001    .000    .000    .000    .000   4,905       1     752
PRODCICS 1999/09/23 RXD2       2   .512    .004    .000    .000    .000    .000   5,332      42     784
PRODCICS 1999/09/23 TSFU       1  1.587    .008    .000    .000    .000    .000   6,000     132     544
PRODCICS 1999/09/23 TSGM       7   .100    .002    .000    .000    .000    .000   6,689      10   1,632
PRODCICS 1999/09/23 MC01      22   .034    .001    .000    .000    .000    .000   5,793       2   3,096
PRODCICS 1999/09/23 MC02       5   .189    .004    .000    .000    .000    .000   8,481      18   7,408
PRODCICS 1999/09/23 CUA        1  5.448    .032    .000    .000    .000    .000  80,192   4,004 150,936
PRODCICS 1999/09/23 TERE       1   .401    .084    .000    .000    .000    .000   6,040      34   3,664
PRODCICS 1999/09/23 DSNC   1,236  3.159    .001    .000    .000    .000    .000   6,446  12,337   7,746
PRODCICS 1999/09/23 FITX     738   .055    .002    .019   3.699    .000    .000  10,312       5   8,330
PRODCICS 1999/09/23 NN01       2   .002    .000    .000    .000    .000    .000   6,340       0   3,856
PRODCICS 1999/09/23 MCP2       6  1.937    .027    .004   1.000    .000    .000  82,549   1,356 152,962
PRODCICS 1999/09/23 MC00     223  1,336    .036    .005   1.206    .676   7.156  90,923   1,624 197,186
PRODCICS 1999/09/23 *TOTAL* 2,983 1.436    .004    .005   1.007    .050    .535  13,513   5,239  20,604

PRODCICS *TOTAL*           3,655 1.200    .004    .004    .925    .051    .517  12,815   4,301  19,183

   RUN  *TOTAL*           3,655 1.200    .004    .004    .925    .051    .517  12,815   4,301  19,183
```

Figure 30. Performance Analysis for All Transactions Report

Performance Analysis by Program Report (CMRCOB12)

The CMRCOB12 sample program produces the Performance Analysis by Program report. This report has control breaks based on the T6EPGNM (program name) field.

Generate this report to evaluate task performance subdivided by program name.

Note: This report is most useful when a fourth-generation language (4GL) is used.

Sample Report

```
PROGRAM: CMRCOB12            PERFORMANCE ANALYSIS FOR ALL PROGRAMS            DATE: 1999/09/24
                                      TIME:  16:19:46
                                      PAGE:     1
```

CICS REGION	RUN DATE	PROGRAM NAME	TRAN COUNT	AVERAGE RESPONSE	AVERAGE CPU REAL	AVG FILE WAIT TIME	AVG FILE CALLS	AVG DB WAIT TIME	AVG DB CALLS	AVERAGE STRG HWM	STORAGE OCCUPANCY	AVG PROG STRG HWM
PRODCICS	1999/09/17	CMRJRNL	1	.002	.001	.000	.000	.000	.000	6,856	0	4,616
PRODCICS	1999/09/17	CMRROLL	161	.041	.001	.014	2.180	.000	.000	10,314	3	8,337
PRODCICS	1999/09/17	DFHCCMF	161	.017	.001	.000	.000	.000	.000	4,913	0	752
PRODCICS	1999/09/17	DFHCRQ	1	.937	.007	.000	.000	.000	.000	5,744	78	784
PRODCICS	1999/09/17	DFHFCU	1	1.570	.008	.000	.000	.000	.000	6,000	131	544
PRODCICS	1999/09/17	DFHGMM	1	.986	.007	.000	.000	.000	.000	6,568	85	1,632
PRODCICS	1999/09/17	DFHSNP	2	.323	.007	.000	.000	.000	.000	6,924	265	7,384
PRODCICS	1999/09/17	DFHTPQ	6	.056	.006	.000	.000	.000	.000	5,976	5	3,016
PRODCICS	1999/09/17	DFHZATD	1	.369	.018	.000	.000	.000	.000	8,360	31	16,232
PRODCICS	1999/09/17	DFHZXRE	1	.354	.038	.000	.000	.000	.000	5,744	29	3,664
PRODCICS	1999/09/17	DSNCCOM1	311	.015	.001	.000	.000	.000	.000	6,416	1	7,752
PRODCICS	1999/09/17	T2CINIT	25	3.252	.050	.005	1.120	1.517	11.760	79,764	3,610	188,601
PRODCICS	1999/09/17	*TOTAL*	672	.150	.003	.003	.563	.056	.437	9,717	137	12,872
PRODCICS	1999/09/23	CMRJRNL	2	.002	.000	.000	.000	.000	.000	6,340	0	3,856
PRODCICS	1999/09/23	CMRROLL	738	.055	.002	.019	3.699	.000	.000	10,312	5	8,330
PRODCICS	1999/09/23	DFHCCMF	738	.025	.001	.000	.000	.000	.000	4,905	1	752
PRODCICS	1999/09/23	DFHCRQ	2	.512	.004	.000	.000	.000	.000	5,332	42	784
PRODCICS	1999/09/23	DFHFCU	1	1.587	.008	.000	.000	.000	.000	6,000	132	544
PRODCICS	1999/09/23	DFHGMM	7	.100	.002	.000	.000	.000	.000	6,689	10	1,632
PRODCICS	1999/09/23	DFHSNP	5	.189	.004	.000	.000	.000	.000	8,481	18	7,408
PRODCICS	1999/09/23	DFHTPQ	22	.034	.001	.000	.000	.000	.000	5,793	2	3,016
PRODCICS	1999/09/23	DFHZATD	1	.373	.019	.000	.000	.000	.000	8,360	31	16,232
PRODCICS	1999/09/23	DFHZXRE	1	.401	.084	.000	.000	.000	.000	6,040	34	3,664
PRODCICS	1999/09/23	DSNCCOM1	1,236	3.159	.001	.000	.000	.000	.000	6,446	12,337	7,746
PRODCICS	1999/09/23	T2CINIT	230	1.369	.035	.005	1.196	.656	6.939	90,658	1,628	195,831
PRODCICS	1999/09/23	*TOTAL*	2,983	1.436	.004	.005	1.007	.050	.535	13,513	5,239	20,604
PRODCICS	*TOTAL*		3,655	1.200	.004	.004	.925	.051	.517	12,815	4,301	19,183
RUN *TOTAL*			3,655	1.200	.004	.004	.925	.051	.517	12,815	4,301	19,183

Figure 31. Performance Analysis by Program Report

Performance Analysis by Terminal Report (CMRCOB13)

The CMRCOB13 sample program produces the Performance Analysis by Terminal report. This report has control breaks based on the T6ETMID (terminal ID) field.

Generate this report to evaluate task performance subdivided by terminal.

Sample Report

```
PROGRAM: CMRCOB13              PERFORMANCE ANALYSIS BY TERMINAL        10:27 FRIDAY, SEPTEMBER 20, 1999   1

CICS        TERM    TRAN AVERAGE  AVERAGE  AVG FILE AVG FILE   AVG DB   AVG DB  AVERAGE  STORAGE AVG PROG
REGION  RUN DATE   ID    COUNT RESPONSE CPU REAL  WAIT TIME    CALLS WAIT TIME   CALLS STRG HWM OCCUPANCY STRG HWM
--------  ---------- -------  ------- --------  --------  -------- --------  --------  -------- ---------  ---------  --------
PRODCICS 1999/09/17         3,582  4.387    .001    .008  1.770     .000     .000   7,384   7,151   6,899
PRODCICS 1999/09/17 E202  1,008   .743    .042    .000  1.083     .334    9.391  98,364     920 198,420
PRODCICS 1999/09/17 E210    27  1.811    .036    .013  1.518     .785    7.629  74,227   2,072 167,457
PRODCICS 1999/09/17 S211    84   .678    .054    .013  1.511     .147    9.285  92,671     598 183,859
PRODCICS 1999/09/17 S214     4  1.706    .470    .000   .000     .000     .000  23,130   4,281  19,422
PRODCICS 1999/09/17 TERC     2  6.312    .087    .000   .000     .924   10.000  98,348   6,003  96,360
PRODCICS 1999/09/17 *TOTAL* 4,707  3.524    .012    .007  1.615     .079    2.224  28,825   5,667  52,040
PRODCICS 1999/09/18         3,442 13.937    .001    .004   .535     .000     .000   7,061   6,831   6,010
PRODCICS 1999/09/18 X002    79  1.123    .012    .004  1.101     .172    1.367  66,515     872 173,636
PRODCICS 1999/09/18 X003     2   .051    .004    .000   .500     .000     .000  45,788      44  77,292
PRODCICS 1999/09/18 *TOTAL* 3,523 13.642    .001    .004   .548     .003     .030   8,417   6,693   9,802
PRODCICS 1999/09/21         1,986 13.340    .001    .006   .898     .000     .000   7,086   4,234   5,915
PRODCICS 1999/09/21 S201    25  3.457    .040    .010  1.200    1.734    6.640  70,617   3,301 171,156
PRODCICS 1999/09/21 S202    11   .333    .007    .014  1.272     .115     .818  35,663   3,181  82,848
PRODCICS 1999/09/21 TN03     8  1.427    .014    .000   .375     .595    3.000  52,203   1,623  89,860
PRODCICS 1999/09/21 X003   181   .620    .019    .016  1.718     .186    4.558  82,966     598 175,692
PRODCICS 1999/09/21 *TOTAL* 2,211 12.079    .004    .007   .969     .037     .463  14,322   3,911  22,368
PRODCICS 1999/09/17         644   .027    .001    .003   .545     .000     .000   7,012       2   6,084
PRODCICS 1999/09/17 E209    28  2.962    .046    .004  1.000    1.355   10.500  71,947   3,245 168,980
PRODCICS 1999/09/17 *TOTAL*  672   .150    .003    .003   .563     .056     .437   9,717     137  12,872
PRODCICS 1999/09/23         2,741  1.447    .001    .005   .996     .000     .000   7,066   5,565   5,973
PRODCICS 1999/09/23 CZE3    20  2.112    .036    .016  1.650    1.034    9.150  85,640   2,278 178,929
PRODCICS 1999/09/23 E206     9  1.168    .018    .019  1.777     .077     .777  54,978     814 137,496
PRODCICS 1999/09/23 E207    17  1.924    .032    .008  1.411     .705    5.296  82,023   2,079 172,496
PRODCICS 1999/09/23 S204   163   .996    .035    .001  1.036     .538    6.802  93,258   1,355 198,442
PRODCICS 1999/09/23 S210    13  2.649    .028    .016   .615    1.198   10.615  59,868   2,210 150,362
PRODCICS 1999/09/23 X002     2  3.125    .063    .014   .500     .000     .000  47,016   2,182  77,292
PRODCICS 1999/09/23 X003    18  1.582    .026    .013  1.333     .786    3.777  70,284   1,797 160,321
PRODCICS 1999/09/23 *TOTAL* 2,983  1.436    .004    .005  1.007     .050     .535  13,513   5,239  20,604
```

Figure 32. Performance Analysis by Terminal Report

Performance Analysis by Netname Report (CMRCOB14)

The CMRCOB14 sample program produces the Performance Analysis by Netname report. This sample report has control breaks based on the T6ENETNM (network node name) field.

Generate this report to evaluate task performance subdivided by VTAM symbolic node name.

Sample Report

```
PROGRAM: CMRCOB14                 PERFORMANCE ANALYSIS BY NETNAME                DATE: 1999/09/24
                                       TIME:  16:27:44
                                       PAGE:     1
CICS         NETNAME   TRAN  AVERAGE  AVERAGE  AVG FILE  AVG FILE   AVG DB   AVG DB   AVERAGE  STORAGE  AVG PROG
REGION  RUN DATE       COUNT RESPONSE CPU REAL WAIT TIME   CALLS  WAIT TIME   CALLS   STRG HWM OCCUPANCY STRG HWM
-------- ---------- -------- ------- --------- -------- --------- -------- -------- --------- --------

PRODCICS 1999/09/18          3,442  13.937   .001    .004    .535     .000     .000   7,061    6,831    6,010
PRODCICS 1999/09/18 A100A02      79   1.123   .022    .004   1.101     .172    1.367  66,515      872  173,636
PRODCICS 1999/09/18 A100A03       2    .051   .004    .000    .500     .000     .000  45,788       44   77,292
PRODCICS 1999/09/18 *TOTAL* 3,523  13.642   .001    .004    .548     .003     .030   8,417    6,693    9,809

PRODCICS 1999/09/21          1,986  13.340   .001    .006    .898     .000     .000   7,086    4,234    5,915
PRODCICS 1999/09/21 A051A03       8   1.427   .014    .000    .375     .596    3.000  52,203    1,623   89,860
PRODCICS 1999/09/21 A100A03     181    .620   .029    .016   1.718     .186    4.558  82,966      598  175,692
PRODCICS 1999/09/21 SWTCA201     25   3.457   .040    .010   1.200    1.734    6.640  70,617    3,301  171,156
PRODCICS 1999/09/21 SWTCA202     11    .333   .007    .014   1.272     .115     .818  35,663    3,181   82,848
PRODCICS 1999/09/21 *TOTAL* 2,211  12.079   .004    .007    .969     .037     .463  14,322    3,911   22,368

PRODCICS 1999/09/17            644    .027   .001    .003    .545     .000     .000   7,012        2    6,084
PRODCICS 1999/09/17 SWTAE209     28   2.962   .046    .004   1.000    1.355   10.500  71,947    3,245  168,980
PRODCICS 1999/09/17 *TOTAL*   672    .150   .003    .003    .563     .056     .437   9,717      137   12,872

PRODCICS 1999/09/23          2,741   1.447   .001    .005    .996     .000     .000   7,066    5,565    5,973
PRODCICS 1999/09/23 A100A02       2   3.125   .063    .014    .500     .000     .000  47,016    2,182   77,292
PRODCICS 1999/09/23 A100A03      18   1.582   .026    .013   1.333     .786    3.777  70,284    1,797  160,321
PRODCICS 1999/09/23 LCZHA1E4     20   2.112   .036    .016   1.650    1.034    9.150  85,640    2,278  178,929
PRODCICS 1999/09/23 SWTAE206      9   1.168   .018    .019   1.777     .077     .777  54,978      814  137,496
PRODCICS 1999/09/23 SWTAE207     17   1.964   .032    .008   1.411     .705    5.294  82,023    2,079  172,496
PRODCICS 1999/09/23 SWTCA204    163    .994   .035    .001   1.036     .538    6.801  93,258    1,355  198,442
PRODCICS 1999/09/23 SWTCA210     13   2.649   .028    .016    .615    1.198   10.615  59,868    2,210  150,362
PRODCICS 1999/09/23 *TOTAL* 2,983   1.436   .004    .005   1.007     .050     .535  13,513    5,239   20,604

PRODCICS *TOTAL*            9,389   8.430   .003    .005    .794     .030     .321  11,519    5,107   16,416

   RUN  *TOTAL*            9,389   8.430   .003    .005    .794     .030     .321  11,519    5,107   16,416
```

Figure 33. Performance Analysis by Netname Report

Performance Analysis for All Users Report (CMRCOB15)

The CMRCOB15 sample program produces the Performance Analysis for All Users report. This sample report has control breaks based on the T6EUSER (user ID) field.

Generate this report to evaluate task performance subdivided by user ID.

Sample Report

```
PROGRAM: CMRCOB15               PERFORMANCE ANALYSIS FOR ALL USERS                 DATE: 1999/09/24
                                        TIME:   12:00:46
                                        PAGE:     1
CICS         USER ID    TRAN  AVERAGE  AVERAGE  AVG FILE AVG FILE  AVG DB  AVG DB  AVERAGE  STORAGE AVG PROG
REGION   RUN DATE       COUNT RESPONSE CPU REAL WAIT TIME  CALLS  WAIT TIME CALLS STRG HWM OCCUPANCY STRG HWM
-------- ---------- -------- ------- --------- -------- --------- -------- -------- --------- --------

PRODCICS 1999/09/15 _____      33   .298   .030   .002  1.393   .103  4.787  68,281    275  142,680
PRODCICS 1999/09/15 CPS19   2,678  1.253   .001   .004  1.147   .000   .000  7,076  5,520  5,999
PRODCICS 1999/09/15 CMR4      174  1.240   .038   .003  1.040   .618  9.264  78,969  1,477  164,303
PRODCICS 1999/09/15 *TOTAL* 2,885  1.242   .004   .004  1.144   .038   .613  12,112  5,216  17,110

PRODCICS 1999/09/16 _____     186   .613   .021   .005  1.198   .177  3.112  68,075    580  165,676
PRODCICS 1999/09/16 JEN1    3,402 13.994   .001   .006  2.126   .000   .000  7,069  6,825  6,020
PRODCICS 1999/09/16 CMR4      661   .970   .040   .000   .989   .468 10.028  88,636  1,191  187,063
PRODCICS 1999/09/16 *TOTAL* 4,256 11.387   .008   .005  1.909   .080  1.693  22,403  5,677  41,115

PRODCICS 1999/09/17 _____   1,204   .733   .042   .005  1.151   .309  8.698  92,132  1,709  185,907
PRODCICS 1999/09/17 CMR4    3,503  4.483   .001   .007  1.774   .000   .000  7,066  7,028  6,030
PRODCICS 1999/09/17 *TOTAL* 4,707  3.524   .012   .007  1.615   .079  2.224  28,825  5,667  52,040

PRODCICS 1999/09/18 _____      98   .910   .018   .003   .897   .139  1.102  55,559    704  142,087
PRODCICS 1999/09/18 CMRG    3,425 14.006   .001   .004   .538   .000   .000  7,068  6,864  6,024
PRODCICS 1999/09/18 *TOTAL* 3,523 13.642   .001   .004   .548   .003   .030  8,417  6,693  9,809

PRODCICS 1999/09/21 _____     233   .858   .027   .013  1.463   .331  4.253  72,762    965  155,302
PRODCICS 1999/09/21 CMR7    1,967 13.468   .001   .006   .907   .000   .000  7,099  4,275  5,942
PRODCICS 1999/09/21 CMR8       11  1.313   .016   .014  1.545   .549  3.000  68,080  1,280  143,877
PRODCICS 1999/09/21 *TOTAL* 2,211 12.079   .004   .007   .969   .037   .463  14,322  3,911  22,368

PRODCICS 1999/09/17 _____       3   .544   .007   .000   .000   .000   .000  6,805    205  5,466
PRODCICS 1999/09/17 CMR5      638   .027   .001   .003   .550   .000   .000  7,021      2  6,113
PRODCICS 1999/09/17 CMR1       31  2.634   .042   .004   .903  1.224  9.483  65,482  2,912  152,697
PRODCICS 1999/09/17 *TOTAL*  672   .150   .003   .003   .563   .056   .437  9,717    137  12,872

PRODCICS 1999/09/23 _____     264  1.202   .031   .005  1.041   .571  6.045  79,803  1,419  171,052
PRODCICS 1999/09/23 CMR6    2,719  1.459   .001   .005  1.004   .000   .000  7,076  5,610  5,997
PRODCICS 1999/09/23 *TOTAL* 2,983  1.436   .004   .005  1.007   .050   .535  13,513  5,239  20,604

PRODCICS *TOTAL*        21,237  6.959   .006   .005  1.247   .052  1.058  17,617  5,360  29,356

   RUN  *TOTAL*         21,237  6.959   .006   .005  1.247   .052  1.058  17,617  5,360  29,356
```

Figure 34. Performance Analysis for All Users Report

File Analysis for All Files Report (CMRCOB21)

The CMRCOB21 sample program produces the File Analysis for All Files report. This report has control breaks based on the T6EFN (file name) field.

Generate this report to evaluate file performance.

Note: A CMRDETL data set may contain two forms of T6E records, original and expanded. Any program that you run against T6E file data needs to know which type of record it is processing. CMRCOB21 uses the expanded record flag (field T6EQUAL) to determine whether a given record is expanded or not. This program illustrates how to process both original and expanded format records in the same file.

Sample Report

```
PROGRAM: CMRCOB21                FILE ANALYSIS FOR ALL FILES          DATE: 1999/09/24
                                       TIME:  16:36:20
                                       PAGE:      1
  CICS          FILE    FILE    TOTAL    TOTAL AVG. WAITS   AVERAGE  AVG. TIME
  REGION  RUN DATE  NAME    TYPE    TRANS    WAITS  PER TRAN  WAIT TIME  PER WAIT
  --------  ----------  --------  --------  ---------  ----------  -----------  -----------  -----------

PRODCICS 1999/09/23 CMRSTAT  CICS FCT    148    198    1.337     .096     .071
PRODCICS 1999/09/23 CUDCNLOG  CICS FCT     1     2    2.000     .035     .017
PRODCICS 1999/09/23 CUISCNTL  CICS FCT     2     7    3.500     .088     .025
PRODCICS 1999/09/23 CUPFR01   DB2         1    50   50.000    7.246     .144
PRODCICS 1999/09/23 CUPINIT   DB2         3     6    2.000     .862     .431
PRODCICS 1999/09/23 CUPSSON   DB2         2    82   41.000    2.875     .070
PRODCICS 1999/09/23 DFHRPL    PSEUDO    241  1,829    7.589     .275     .036
PRODCICS 1999/09/23 DFHUECB   PSEUDO      1     1    1.000     .346     .346
PRODCICS 1999/09/23 M2DCNLOG  CICS FCT     1     2    2.000     .052     .026
PRODCICS 1999/09/23 M2DPCT    CICS FCT     3     4    1.333     .046     .035
PRODCICS 1999/09/23 M2ISCNTL  CICS FCT    12    27    2.250     .078     .034
PRODCICS 1999/09/23 M2PACHP   DB2         4    42   10.500     .811     .077
PRODCICS 1999/09/23 M2PIB21   DB2         2    34   17.000    2.517     .148
PRODCICS 1999/09/23 M2PIG21   DB2         5   112   22.400    3.621     .161
PRODCICS 1999/09/23 M2PINIT   DB2        65   167    2.569     .172     .067
PRODCICS 1999/09/23 M2PMC01   DB2         1    67   67.000    3.647     .054
PRODCICS 1999/09/23 M2PMC06   DB2         4    61   15.250     .354     .023
PRODCICS 1999/09/23 M2PMC21   DB2         2     5    2.500    1.031     .412
PRODCICS 1999/09/23 M2PMC43   DB2         2     8    4.000     .336     .084
PRODCICS 1999/09/23 M2PMD21   DB2        15   507   33.800    2.096     .061
PRODCICS 1999/09/23 M2PMI03   DB2         3    59   19.666    1.624     .082
PRODCICS 1999/09/23 M2PMI04   DB2         1     6    6.000    1.951     .325
PRODCICS 1999/09/23 M2PRA01   DB2         1    18   18.000     .422     .023
PRODCICS 1999/09/23 M2PRA21   DB2         4    50   12.500    2.396     .191
PRODCICS 1999/09/23 M2PRB01   DB2         2    14    7.000     .071     .010
PRODCICS 1999/09/23 M2PRB21   DB2         6   104   17.333    2.566     .148
PRODCICS 1999/09/23 M2PRC21   DB2         1    17   17.000    5.219     .307
PRODCICS 1999/09/23 M2PRD21   DB2         2    84   42.000    5.057     .120
PRODCICS 1999/09/23 M2PRK50   DB2         1     4    4.000    2.383     .596
PRODCICS 1999/09/23 M2PSSON   DB2         5    99   19.800    1.682     .084
PRODCICS 1999/09/23 *TOTAL*           541  3,666    6.776     .430     .063

PRODCICS *TOTAL*               541  3,666    6.776     .430     .063

   RUN  *TOTAL*             541  3,666    6.776     .430     .063
```

Figure 35. File Analysis for All Files Report

Rogues Report (CMRCOB23)

The CMRCOB23 sample program produces the Highest Response Times All Transactions Report. This report is also known as the Rogues Report. The report is produced by

- Reading the CMRDETL file

- Calculating response times of tasks

  Note: Response times under 1.000 seconds are bypassed.

- Producing a list of the 100 tasks with the longest response times

Generate this report to evaluate tasks with the greatest response times. Modify the report control statements in the JCL stream to limit the input for your report.

Sample Report

```
PROGRAM: CMRCOB23                    HIGHEST RESPONSE TIMES ALL TRANSACTIONS              DATE: 1999/09/24
                                                  TIME:  17:03:32
                                                  PAGE:     1
CICS              TRAN            FILE   FILE    DB    DB        STORAGE  PROGRAM
REGION  RUN DATE  RUN TIME  CODE  RESPONSE CPU REAL  WAIT TIME   CALLS  WAIT TIME    CALLS STRG HWM OCCUPANCY STRG HWM
--------  ----------  --------  ------  --------  --------  --------  --------  --------  --------  --------  ---------  --------

PRODCICS  1999/09/17  09:06:50  MC00   17.045   .157   .000  1.000   10.664  33.000  165,360   29,066  198,856
PRODCICS  1999/09/10  12:41:21  MC00   17.278   .105   .000  1.000   14.631  38.000  126,128   30,117  194,440
PRODCICS  1999/09/05  11:48:39  MC01   17.522   .126   .000  1.000   13.545  48.000  147,104   27,343  192,448
PRODCICS  1999/09/23  10:03:28  MC00   17.538   .121   .000  1.000   13.143  24.000  121,168   23,743  189,632
PRODCICS  1999/09/17  11:58:22  MC00   17.686   .156   .000  2.000   12.921  47.000  168,104   29,506  214,288
PRODCICS  1999/09/06  10:16:29  MC01   17.784   .123   .000  1.000   14.172  41.000  126,944   30,053  194,440
PRODCICS  1999/09/12  10:33:21  MC00   17.912   .084   .000  1.000   14.355  10.000  122,080   29,601  211,400
PRODCICS  1999/09/15  08:16:53  MC00   17.996   .121   .000  1.000   15.335  55.000  123,592   29,806  200,120
PRODCICS  1999/09/17  12:39:15  JC02   18.554   .127   .000  1.000   14.967  46.000  128,656   31,397  198,872
PRODCICS  1999/09/15  14:22:13  JC02   18.682   .118   .000  1.000   15.834  48.000  148,280   31,336  215,496
PRODCICS  1999/09/07  10:15:13  MC00   19.178   .136   .076  4.000   11.469  82.000   74,488   16,249  189,744
PRODCICS  1999/09/10  12:41:50  MC00   19.477   .082   .000  1.000   15.437  18.000  121,288   29,911  211,696
PRODCICS  1999/09/08  12:59:26  MC00   19.861   .029   .000  1.000     .000    .000   67,344   14,934  181,784
PRODCICS  1999/09/03  15:00:35  JC00   20.027   .133   .177  4.000   10.800  82.000   74,488   16,795  189,744
PRODCICS  1999/09/05  11:18:39  JC00   20.820   .123   .000  1.000   16.772  42.000  126,544   35,143  194,440
PRODCICS  1999/09/06  10:15:15  MC00   21.177   .167   .123  4.000   12.261  82.000   74,648   17,916  189,744
PRODCICS  1999/09/03  14:53:07  MC00   21.232   .112   .178  4.000   12.337  81.000   74,312   18,052  189,744
PRODCICS  1999/09/14  13:58:44  MC00   22.130   .112   .000  2.000   18.572  40.000  138,864   44,330  217,496
PRODCICS  1999/09/06  11:00:53  MC00   22.449   .161   .305  4.000   11.313  82.000   74,648   19,387  189,744
PRODCICS  1999/09/23  10:02:22  MC00   22.509   .139   .118  4.000   10.282  81.000   74,488   19,002  189,744
PRODCICS  1999/09/14  12:29:10  PC01   22.661   .077   .000  1.000   19.436  19.000  136,120   35,632  193,528
PRODCICS  1999/09/17  08:00:34  PC01   24.136   .105   .000  1.000   18.302  49.000  148,080   36,061  192,680
PRODCICS  1999/09/16  10:29:20  PC02   24.159   .124   .000  1.000   20.919  54.000  131,104   40,124  194,440
PRODCICS  1999/09/08  02:38:47  PC02   25.308   .086   .000  1.000   22.968  19.000  146,816   39,550  212,960
PRODCICS  1999/09/23  13:40:50  MC00   30.297   .112   .000  1.000   25.396  38.000  126,992   51,905  196,424
PRODCICS  1999/09/14  11:21:51  MC00   33.303   .173   .000  1.000   27.457  60.000  160,616   63,766  178,656
PRODCICS  1999/09/14  10:59:21  MC00   37.881   .136   .136  4.000   23.105  81.000   74,488   31,827  189,744
```

Figure 36. COBOL Rogues Report

Abended Transaction Report (CMRCOB25)

The CMRCOB25 sample program produces the Abended Transaction report by

- Reading the CMRDETL file
- Listing all transactions with an abend code

Generate this report to list all transactions that suffered an abend during the recorded interval. Modify the report control statements in the JCL stream to limit the input for your report.

Sample Report

```
PROGRAM: CMRCOB25                    ABENDED TRANSACTION REPORT                    DATE: 1999/09/24
                                          TIME:  17:04:54
                                          PAGE:     1
  CICS            TRAN ABEND            FILE  FILE    DB    DB       STORAGE
  REGION  RUN DATE  RUN TIME  CODE   CODE RESPONSE CPU REAL  WAIT TIME  CALLS WAIT TIME  CALLS STRG HWM  OCCUPANCY
-------- ---------- -------- ------ ------- -------- -------- ---------- ------ --------- ------ -------- ---------

PRODCICS 1999/09/05 18:09:07 AEY9   MC00     3.016     .057     .059  1.000     .000     .000  67,344     2,456
PRODCICS 1999/09/15 13:33:20 AEY9   MC00     2.714     .063     .035  1.000     .000     .000  67,344     2,098
PRODCICS 1999/09/15 13:41:31 AEY9   MC00      .110     .014     .000  1.000     .000     .000  74,176        80
PRODCICS 1999/09/15 15:52:03 AEY9   MC00      .321     .014     .000  1.000     .000     .000  66,928       222
PRODCICS 1999/09/08 13:02:52 QUIT   MC00     3.171     .067     .068  6.000     .049    2.000  87,208     3,038
PRODCICS 1999/09/08 14:03:19 QUIT   MC00      .850     .028     .077  6.000     .064    2.000  87,208       758
PRODCICS 1999/09/08 14:53:43 QUIT   MC00      .165     .027     .052  6.000     .006    2.000  87,208       142
PRODCICS 1999/09/08 15:02:38 ATNI   FITX     1.946     .023     .000   .000     .000     .000  30,962   204,839
PRODCICS 1999/09/09 18:19:39 AEY9   MC00     3.382     .059     .020  1.000     .000     .000  67,344     2,670
PRODCICS 1999/09/15 08:11:48 DB2E   MC00     4.760     .087     .090  6.000    1.120    1.000 116,080     7,269
PRODCICS 1999/09/15 08:19:29 DB2E   MC00      .802     .023     .087  6.000     .230    3.000  64,544       618
PRODCICS 1999/09/15 08:21:03 DB2E   MC00     2.316     .035     .140  6.000     .064    1.000 112,176     3,692
PRODCICS 1999/09/15 08:37:47 DB2E   MC00      .209     .034     .045  6.000     .004    1.000 112,176       243
PRODCICS 1999/09/17 13:12:22 ASRA   MC00    12.296     .133     .080  6.000    3.665   12.000 128,848    20,458
PRODCICS 1999/09/17 13:17:54 ASRA   MC00     1.699     .089     .052  6.000     .013    5.000 111,056     2,574
PRODCICS 1999/09/17 13:25:39 ASRA   MC00      .483     .033     .081  6.000     .042   12.000 124,944       698
PRODCICS 1999/09/17 13:34:35 ASRA   MC00     1.069     .033     .329  6.000     .033   10.000 110,816     1,404
PRODCICS 1999/09/17 14:00:19 LLL    MC00   717.335     .014     .000   .000     .000     .000  96,208 1,029,337
PRODCICS 1999/09/17 14:34:24 LLL    MC00 1,712.149     .075     .650 24.000     .000     .000 103,248 2,461,196
PRODCICS 1999/09/17 14:57:22 ATNI   FITX      .145     .003     .000   .000     .000     .000  31,048    28,320
PRODCICS 1999/09/18 18:46:08 AEY9   MC00     3.243     .060     .020  1.000     .000     .000  67,344     2,567
```

Figure 37. Abended Transaction Report

COBOL

Chapter 8. SAS Reports

Sample programs are included in your BBSAMP data set to create SAS reports from data collected by MAINVIEW for CICS. Copies of these sample programs can be modified to create unique SAS reports.

This chapter contains

- Control statements to specify the input data for SAS programs
- Descriptions of SAS report fields
- Examples of SAS reports

Detail transaction records are compressed when they are stored on the CMRDETL data set. You have the choice of creating SAS reports from compressed or decompressed 6E and 6D records. You must run a separate job if you want to create SAS reports with decompressed CMRDETL records.

Member CMRSAS10 of your BBSAMP data set decompresses 6E and 6F records. The decompressed output records are compatible with SAS programs. Edit a copy of CMRSAS10 and run the program to create decompressed detail transaction records before running your SAS report programs.

Note: Be sure to run your SAS report programs using the current version of the MAINVIEW for CICS libraries.

Sample SAS Programs

The interface routines in MAINVIEW for CICS give SAS programs access to records held in the CMRDETL and CMRSTATS data sets. SAS reports are created from these records. See Appendix B, "CMRDETL: Transaction Detail Records" on page 173 for the format of CMRDETL records and Appendix C, "CMRSTATS: Operational Statistics Records" on page 205 for the format of CMRSTATS records.

Table 3 on page 94 identifies the sample SAS programs and their associated reports. The table also includes a reference to a section in this book that shows an example of the SAS report.

Table 3. Sample SAS Programs

Sample Report Title	Sample Library Member/Program Name	Description	Section Reference
Performance Ananlysis for All Transactions	CMRSAS11	Produces a report with control breaks based on the T6ETRID field. This report gives an evaluation of task performance subdivided by transaction.	"Performance Analysis for All Transactions Report (CMRSAS11)" on page 97
Performance Analysis by Program	CMRSAS12	Produces a report with control breaks based on the T6EPGNM field. This report is useful for evaluating task performance subdivided by T6EPGNM. This is most helpful when a Fourth Generation Language (4GL) is used. The report is almost identical to the report produced by CMRSAS11.	"Performance Analysis by Program Report (CMRSAS12)" on page 98
Performance Analysis by Terminal	CMRSAS13	Produces a report with control breaks based on the T6ETMID field. This report is useful for evaluating task performance subdivided by terminal. The report is almost identical to the report produced by CMRSAS11.	"Performance Analysis by Terminal Report (CMRSAS13)" on page 99
Performance Analysis by VTAM Symbolic Node Name	CMRSAS14	Produces a report with control breaks based on the T6ENETNM field. This report is useful for evaluating task performance subdivided by VTAM symbolic node name. The report is almost identical to the report produced by CMRSAS11.	"Performance Analysis by Node Name Report (CMRSAS14)" on page 100
Performance Analysis by User ID	CMRSAS15	Produces a report with control breaks based on the T6EUSER field. This report is useful for evaluating task performance subdivided by user ID. The report is almost identical to the report produced by CMRSAS11.	"Performance Analysis by User ID Report (CMRSAS15)" on page 101
File Analysis for All Files	CMRSAS21	Produces a report with control breaks based on the T6EFN field. This report is useful for evaluating file performance by file name.	"File Analysis for All Files Report (CMRSAS21)" on page 102
Rogues Report	CMRSAS23	Produces a report that lists the tasks with the longest response times.	"Rogues Report (CMRSAS23)" on page 103

Table 3. Sample SAS Programs (Continued)

Sample Report Title	Sample Library Member/Program Name	Description	Section Reference
Abended Transaction Roster	CMRSAS25	Produces a report of all transactions that had an abend during execution.	"Abended Transaction Roster Report (CMRSAS25)" on page 104
Operational Statistics Report	CMRSAS6F	Produces a report that lists overall transaction performance across CICS regions.	"Operational Statistics Report (CMRSAS6F)" on page 105

Control Statements

Control statements are processed by the SAS programs to select data from specific CICS regions. You also can provide a starting date and a starting time.

Use the following report control statements to select the data that appears in the SAS reports:

CICS=   Name of the CICS region providing data for the reports (for example, CICS=cicsprod).

DATE=   Processing start date in yyyymmdd format (for example, DATE=19990924).

TIME=   Processing start time in hhmmss format (for example, TIME=082314).

SAS Report Fields

The following describes the columnar data shown in the SAS sample reports in this chapter:

CICS REGION
Name of the CICS region associated with the data.

RUN DATE
Gregorian date associated with the data, in yyyy/mm/dd format.

TRAN CODE
Transaction identification of the CICS task.

PROGRAM NAME
Name of the program associated with the data.

TERM ID
Terminal identifier.

NETNAME
VTAM symbolic node name.

USER ID
>Identification of the CICS user.

FILE NAME
>Name of the file.

RUN TIME
>Task termination time associated with the data, in hh:mm:ss format.

ABEND CODE
>Abend code of an abended transaction.

TRAN COUNT
>Number of executed transactions.

AVERAGE CPU REAL
>Average amount of real CPU time used by each transaction (in seconds).

AVG FILE WAIT TIME
>Average time waiting for files during this transaction (in seconds).

AVG FILE CALLS
>Average number of file calls for each transaction.

AVG DB WAIT TIME
>Average amount of wait time to access a database for each transaction.

AVG DB CALLS
>Average number of database calls per transaction.

AVERAGE STRG HWM
>Average storage high-water mark during this time interval.

STORAGE OCCUPANCY
>Average storage usage in kilobytes. A value of 1 is equivalent to 250 bytes held for .25 seconds. This value can be used to evaluate the impact on available storage caused by a transaction.

AVG PROG STRG HWM
>Average program storage high-water mark for all transactions.

Performance Analysis for All Transactions Report (CMRSAS11)

The CMRSAS11 sample program produces the Performance Analysis for All Transactions report. This report has control breaks based on the T6ETRID (transaction ID) field.

Generate this report to evaluate task performance subdivided by transaction.

Sample Report

```
PROGRAM: CMRSAS11            PERFORMANCE ANALYSIS FOR ALL TRANSACTIONS    10:27 WEDNESDAY, SEPTEMBER 18, 1999  1
  CICS       TRAN   TRAN AVERAGE  AVERAGE  AVG FILE AVG FILE  AVG DB   AVG DB AVERAGE  STORAGE  AVG PROG
 REGION   RUN DATE  CODE COUNT RESPONSE  CPU REAL  WAIT TIME   CALLS WAIT TIME  CALLS STRG HWM OCCUPANCY STRG HWM
PRODCICS 1999/09/22 CATD     1   .369   .018   .000  .000   .000   .000  8,360     31  16,232
PRODCICS 1999/09/22 CCMF   161   .017   .001   .000  .000   .000   .000  4,913      0     752
PRODCICS 1999/09/22 CRSQ     1   .937   .007   .000  .000   .000   .000  5,744     78     784
PRODCICS 1999/09/22 CSFU     1  1.570   .008   .000  .000   .000   .000  6,000    131     544
PRODCICS 1999/09/22 CSGM     1   .986   .007   .000  .000   .000   .000  6,568     85   1,632
PRODCICS 1999/09/22 CSPQ     6   .056   .006   .000  .000   .000   .000  5,976      5   3,096
PRODCICS 1999/09/22 CSSN     2   .323   .007   .000  .000   .000   .000  6,924    265   7,384
PRODCICS 1999/09/22 CXRE     1   .354   .038   .000  .000   .000   .000  5,744     29   3,664
PRODCICS 1999/09/22 DSNC   311   .015   .001   .000  .000   .000   .000  6,416      1   7,752
PRODCICS 1999/09/22 FIC2   161   .041   .001   .014 2.180   .000   .000 10,314      3   8,337
PRODCICS 1999/09/22 JNL2     1   .002   .001   .000  .000   .000   .000  6,856      0   4,616
PRODCICS 1999/09/22 MCP2     1  5.066   .093   .028 1.000   .000   .000 81,704  3,579 152,952
PRODCICS 1999/09/22 MC00    24  3.177   .048   .004 1.125  1.581 12.250 79,683  3,612 190,087
PRODCICS 1999/09/22 *TOTAL* 672  .150   .003   .003  .563   .056   .437  9,717    137  12,872
PRODCICS 1999/09/23 CATD     1   .373   .019   .000  .000   .000   .000  8,360     31  16,232
PRODCICS 1999/09/23 CCMF   738   .025   .001   .000  .000   .000   .000  4,905      1     752
PRODCICS 1999/09/23 CRSQ     2   .512   .004   .000  .000   .000   .000  5,332     42     784
PRODCICS 1999/09/23 CSFU     1  1.587   .008   .000  .000   .000   .000  6,000    132     544
PRODCICS 1999/09/23 CSGM     7   .100   .002   .000  .000   .000   .000  6,689     10   1,632
PRODCICS 1999/09/23 CSPQ    22   .034   .001   .000  .000   .000   .000  5,793      2   3,096
PRODCICS 1999/09/23 CSSF     5   .189   .004   .000  .000   .000   .000  8,481     18   7,408
PRODCICS 1999/09/23 CUA      1  5.448   .032   .000  .000   .000   .000 80,192  4,004 150,936
PRODCICS 1999/09/23 CXRE     1   .401   .084   .000  .000   .000   .000  6,040     34   3,664
PRODCICS 1999/09/23 DSNC 1,236  3.159   .001   .000  .000   .000   .000  6,446 12,337   7,746
PRODCICS 1999/09/23 FIC2   738   .055   .002   .019 3.699   .000   .000 10,312      5   8,330
PRODCICS 1999/09/23 JNL2     2   .002   .000   .000  .000   .000   .000  6,340      0   3,856
PRODCICS 1999/09/23 MCP2     6  1.937   .027   .004 1.000   .000   .000 82,549  1,356 152,952
PRODCICS 1999/09/23 MC00   223  1.336   .036   .005 1.206   .676  7.156 90,923  1,624 197,186
PRODCICS 1999/09/23 *TOTAL* 2,983 1.436  .004   .005 1.007   .050   .535 13,513  5,239  20,604
```

Figure 38. Performance Analysis for All Transactions Report

Performance Analysis by Program Report (CMRSAS12)

The CMRSAS12 sample program produces the Performance Analysis by Program report. This report has control breaks based on the T6EPGNM (program name) field.

Generate this report to evaluate task performance subdivided by program name.

Note: This report is most useful when a fourth-generation language (4GL) is used.

Sample Report

```
PROGRAM: CMRSAS12              PERFORMANCE ANALYSIS BY PROGRAM          10:27 WEDNESDAY, SEPTEMBER 25, 1999  1
 CICS          PROGRAM  TRAN AVERAGE  AVERAGE  AVG FILE AVG FILE  AVG DB   AVG DB  AVERAGE  STORAGE  AVG PROG
 REGION  RUN DATE  NAME   COUNT RESPONSE CPU REAL WAIT TIME  CALLS WAIT TIME  CALLS STRG HWM OCCUPANCY STRG HWM
PRODCICS 1999/09/22 CMRJRNL    1   .002   .001  .000  .000   .000   .000  6,856     0   4,616
PRODCICS 1999/09/22 CMRROLL  161   .041   .001  .014 2.180   .000   .000 10,314     3   8,337
PRODCICS 1999/09/22 DFHCCMF  161   .017   .001  .000  .000   .000   .000  4,913     0     752
PRODCICS 1999/09/22 DFHCRQ     1   .937   .007  .000  .000   .000   .000  5,744    78     784
PRODCICS 1999/09/22 DFHFCU     1  1.570   .008  .000  .000   .000   .000  6,000   131     544
PRODCICS 1999/09/22 DFHGMM     1   .986   .007  .000  .000   .000   .000  6,568    85   1,632
PRODCICS 1999/09/22 DFHSNP     2   .323   .007  .000  .000   .000   .000  6,924   265   7,384
PRODCICS 1999/09/22 DFHTPQ     6   .056   .006  .000  .000   .000   .000  5,976     5   3,096
PRODCICS 1999/09/22 DFHZATD    1   .369   .018  .000  .000   .000   .000  8,360    31  16,232
PRODCICS 1999/09/22 DFHZXRE    1   .354   .038  .000  .000   .000   .000  5,744    29   3,664
PRODCICS 1999/09/22 DSNCCOM1 311   .015   .001  .000  .000   .000   .000  6,416     1   7,752
PRODCICS 1999/09/22 T2CINIT   25  3.252   .050  .005 1.120  1.517 11.760 79,764 3,610 188,601
PRODCICS 1999/09/22 *TOTAL*  672   .150   .003  .003  .563   .056   .437  9,717   137  12,872
PRODCICS 1999/09/23 CMRJRNL    2   .002   .000  .000  .000   .000   .000  6,340     0   3,856
PRODCICS 1999/09/23 CMRROLL  738   .055   .009  .019 3.699   .000   .000 10,312     5   8,330
PRODCICS 1999/09/23 DFHCCMF  738   .025   .001  .000  .000   .000   .000  4,905     1     752
PRODCICS 1999/09/23 DFHCRQ     2   .512   .004  .000  .000   .000   .000  5,332    42     784
PRODCICS 1999/09/23 DFHFCU     1  1.587   .008  .000  .000   .000   .000  6,000   132     544
PRODCICS 1999/09/23 DFHGMM     7   .100   .002  .000  .000   .000   .000  6,689    10   1,632
PRODCICS 1999/09/23 DFHSNP     5   .189   .004  .000  .000   .000   .000  8,481    18   7,408
PRODCICS 1999/09/23 DFHTPQ    22   .034   .001  .000  .000   .000   .000  5,793     2   3,096
PRODCICS 1999/09/23 DFHZATD    1   .373   .019  .000  .000   .000   .000  8,360    31  16,232
PRODCICS 1999/09/23 DFHZXRE    1   .401   .084  .000  .000   .000   .000  6,040    34   3,664
PRODCICS 1999/09/23 DSNCCOM1 1,236 3.159  .001  .000  .000   .000   .000  6,446 12,337  7,746
PRODCICS 1999/09/23 T2CINIT  230  1.369   .035  .005 1.195   .656  6.939 90,658 1,628 195,831
PRODCICS 1999/09/23 *TOTAL* 2,983 1.436   .004  .005 1.007   .050   .535 13,513 5,239  20,604
```

Figure 39. Performance Analysis by Program Report

Performance Analysis by Terminal Report (CMRSAS13)

The CMRSAS13 sample program produces the Performance Analysis by Terminal report. This report has control breaks based on the T6ETMID (terminal ID) field.

Generate this report to evaluate task performance subdivided by terminal.

Sample Report

```
PROGRAM: CMRSAS13              PERFORMANCE ANALYSIS BY TERMINAL           10:27  FRIDAY, SEPTEMBER 27, 1999  1
 CICS        TERM    TRAN  AVERAGE   AVERAGE  AVG FILE  AVG FILE   AVG DB    AVG DB   AVERAGE   STORAGE   AVG PROG
REGION  RUN DATE   ID   COUNT  RESPONSE  CPU REAL  WAIT TIME   CALLS  WAIT TIME   CALLS  STRG HWM OCCUPANCY STRG HWM
PRODCICS 1999/09/17          3,582  4.387   .001    .008   1.770    .000     .000   7,384   7,151   6,899
PRODCICS 1999/09/17 E202    1,008   .743   .042    .000   1.083    .334    9.391  98,364     940  198,420
PRODCICS 1999/09/17 E210      27   1.811   .036    .013   1.518    .785    7.629  74,227   2,072  167,457
PRODCICS 1999/09/17 S211      84    .678   .054    .013   1.511    .147    9.285  94,671     598  183,859
PRODCICS 1999/09/17 S214       4   1.706   .470    .000    .000    .000     .000  23,130   4,281   19,422
PRODCICS 1999/09/17 TERC       2   6.312   .087    .000    .000    .924   10.000  98,348   6,003   95,360
PRODCICS 1999/09/17 *TOTAL*  4,707  3.524   .012    .007   1.615    .079    2.224  28,825   5,667   52,040
PRODCICS 1999/09/18          3,442 13.937   .001    .004    .535    .000     .000   7,061   6,831    6,010
PRODCICS 1999/09/18 X002      79   1.123   .022    .004   1.101    .172    1.367  66,515     872  173,636
PRODCICS 1999/09/18 X003       2    .051   .004    .000    .500    .000     .000  45,788      44   77,292
PRODCICS 1999/09/18 *TOTAL*  3,523 13.642   .001    .004    .548    .003     .030   8,417   6,693    9,809
PRODCICS 1999/09/21          1,986 13.340   .001    .006    .898    .000     .000   7,086   4,234    5,915
PRODCICS 1999/09/21 S201      25   3.457   .040    .010   1.200   1.734    6.640  70,617   3,301  171,156
PRODCICS 1999/09/21 S202      11    .333   .007    .014   1.272    .115     .818  35,663   3,181   82,848
PRODCICS 1999/09/21 TN03       8   1.427   .014    .000    .375    .595    3.000  52,203   1,623   89,860
PRODCICS 1999/09/21 X003     181    .620   .029    .016   1.718    .186    4.558  82,966     598  175,692
PRODCICS 1999/09/21 *TOTAL*  2,211 12.079   .004    .007    .969    .037     .463  14,322   3,911   22,368
PRODCICS 1999/09/22          644    .027   .001    .003    .545    .000     .000   7,012       2    6,084
PRODCICS 1999/09/22 E209      28   2.962   .046    .004   1.000   1.355   10.500  71,947   3,245  168,980
PRODCICS 1999/09/22 *TOTAL*  672    .150   .003    .003    .563    .056     .437   9,717     137   12,872
PRODCICS 1999/09/23          2,741  1.447   .001    .005    .995    .000     .000   7,066   5,565    5,973
PRODCICS 1999/09/23 CZE3      20   2.112   .036    .016   1.650   1.034    9.150  85,640   2,278  178,929
PRODCICS 1999/09/23 E206       9   1.168   .018    .019   1.777    .077     .777  54,978     814  137,496
PRODCICS 1999/09/23 E207      17   1.924   .032    .008   1.411    .705    5.294  82,023   2,079  172,495
PRODCICS 1999/09/23 S204     163    .994   .035    .001   1.036    .538    6.809  93,258   1,355  198,442
PRODCICS 1999/09/23 S210      13   2.649   .028    .016    .615   1.198   10.615  59,868   2,210  150,362
PRODCICS 1999/09/23 X002       2   3.125   .063    .014    .500    .000     .000  47,016   2,182   77,292
PRODCICS 1999/09/23 X003      18   1.582   .026    .013   1.333    .786    3.777  70,284   1,797  160,321
PRODCICS 1999/09/23 *TOTAL*  2,983  1.436   .004    .005   1.007    .050     .535  13,513   5,239   20,604
```

Figure 40. Performance Analysis by Terminal Report

Performance Analysis by Node Name Report (CMRSAS14)

The CMRSAS14 sample program produces the Performance Analysis by Node Name report. This sample report has control breaks based on the T6NETNM VTAM symbolic node name.

Generate this report to evaluate task performance subdivided by VTAM symbolic node name.

Sample Report

```
PROGRAM: CMRSAS14              PERFORMANCE ANALYSIS BY VTAM SYMBOLIC NODE NAME   10:27  FRIDAY, SEPTEMBER 27, 1999   1
  CICS         NETNAME   TRAN  AVERAGE  AVERAGE  AVG FILE  AVG FILE  AVG DB  AVG DB  AVERAGE  STORAGE  AVG PROG
 REGION  RUN DATE        COUNT RESPONSE  CPU REAL WAIT TIME   CALLS  WAIT TIME  CALLS  STRG HWM OCCUPANCY STRG HWM
PRODCICS 1999/09/18         3,442 13.937  .001  .004  .535   .000   .000  7,061  6,831  6,010
PRODCICS 1999/09/18 A100A02    79  1.123  .022  .004  1.101  .172  1.367 66,515    872 173,636
PRODCICS 1999/09/18 A100A03     2   .051  .004  .000   .500  .000   .000 45,788     44  77,292
PRODCICS 1999/09/18 *TOTAL* 3,523 13.642  .001  .004   .548  .003   .030  8,417  6,693  9,809
PRODCICS 1999/09/21         1,986 13.340  .001  .006  .898   .000   .000  7,086  4,234  5,915
PRODCICS 1999/09/21 A051A03     8  1.427  .014  .000  .375  .595  3.000 52,203  1,623 89,860
PRODCICS 1999/09/21 A100A03   181   .620  .029  .016 1.718  .186  4.558 82,966    598 175,692
PRODCICS 1999/09/21 SWTCA201   25  3.457  .040  .010 1.200 1.734  6.640 70,617  3,301 171,156
PRODCICS 1999/09/21 SWTCA202   11   .333  .007  .014 1.272  .115   .818 35,663  3,181  82,848
PRODCICS 1999/09/21 *TOTAL* 2,211 12.079  .004  .007  .969  .037   .463 14,322  3,911  22,368
PRODCICS 1999/09/22           644   .027  .001  .003  .545  .000   .000  7,012      2  6,084
PRODCICS 1999/09/22 SWTAE209   28  2.962  .046  .004 1.000 1.355 10.500 71,947  3,245 168,980
PRODCICS 1999/09/22 *TOTAL*   672   .150  .003  .003  .563  .056   .437  9,717    137  12,872
PRODCICS 1999/09/23         2,741  1.447  .001  .005  .995  .000   .000  7,066  5,565  5,973
PRODCICS 1999/09/23 A100A02     2  3.125  .063  .014  .500  .000   .000 47,016  2,182  77,292
PRODCICS 1999/09/23 A100A03    18  1.582  .026  .013 1.333  .786  3.777 70,284  1,797 160,321
PRODCICS 1999/09/23 LCZHA1E4   20  2.112  .036  .016 1.650 1.034  9.150 85,640  2,278 178,929
PRODCICS 1999/09/23 SWTAE206    9  1.168  .018  .019 1.777  .077   .777 54,978    814 137,496
PRODCICS 1999/09/23 SWTAE207   17  1.924  .032  .008 1.411  .705  5.294 82,093  2,079 172,495
PRODCICS 1999/09/23 SWTCA204  163   .994  .035  .001 1.036  .538  6.809 93,258  1,355 198,442
PRODCICS 1999/09/23 SWTCA210   13  2.649  .028  .016  .615 1.198 10.615 59,868  2,210 150,362
PRODCICS 1999/09/23 *TOTAL* 2,983  1.436  .004  .005 1.007  .050   .535 13,513  5,239  20,604
```

Figure 41. Performance Analysis by VTAM Symbolic Node Name Report

Performance Analysis by User ID Report (CMRSAS15)

The CMRSAS15 sample program produces the Performance Analysis by User ID report. This sample report has control breaks based on the T6EUSER (user ID) field.

Generate this report to evaluate task performance subdivided by user ID.

Sample Report

```
PROGRAM: CMRSAS15              PERFORMANCE ANALYSIS BY USER ID         10:27  FRIDAY, SEPTEMBER 27, 1999 1
  CICS        USER ID    TRAN  AVERAGE  AVERAGE  AVG FILE  AVG FILE   AVG DB   AVG DB  AVERAGE  STORAGE  AVG PROG
 REGION  RUN DATE        COUNT RESPONSE CPU REAL WAIT TIME   CALLS  WAIT TIME  CALLS  STRG HWM OCCUPANCY STRG HWM
PRODCICS 1999/02/15          33   .298   .030   .009   1.393   .103   4.787  68,281    275  142,680
PRODCICS 1999/09/15 CICS  2,678  1.253   .001   .004   1.147   .000   .000   7,076  5,520  5,999
PRODCICS 1999/09/15 OH@01   174  1.240   .038   .003   1.040   .618  9.264  78,969  1,477  164,303
PRODCICS 1999/09/15 *TOTAL* 2,885 1.242  .004   .004   1.144   .038   .613  12,112  5,216  17,110
PRODCICS 1999/09/16         186   .613   .021   .005   1.198   .177   3.112  68,075    580  165,676
PRODCICS 1999/09/16 CICS  3,409 13.994   .001   .006   2.126   .000   .000   7,069  6,825  6,020
PRODCICS 1999/09/16 OH@01   661   .970   .040   .000    .989   .468  10.028 88,636  1,191  187,063
PRODCICS 1999/09/16 *TOTAL* 4,256 11.387 .008   .005   1.909   .080  1.693  22,403  5,677  41,115
PRODCICS 1999/09/17       1,204   .733   .042   .005   1.151   .309  8.698  94,132  1,709  185,907
PRODCICS 1999/09/17 CICS  3,503  4.483   .001   .007   1.774   .000   .000   7,066  7,028  6,030
PRODCICS 1999/09/17 *TOTAL* 4,707 3.524  .012   .007   1.615   .079  2.224  28,825  5,667  52,040
PRODCICS 1999/09/18          98   .910   .018   .003    .897   .139  1.102  55,559    704  142,087
PRODCICS 1999/09/18 CICS  3,425 14.006   .001   .004    .538   .000   .000   7,068  6,864  6,024
PRODCICS 1999/09/18 *TOTAL* 3,523 13.642 .001   .004    .548   .003   .030   8,417  6,693  9,809
PRODCICS 1999/09/21         233   .858   .027   .013   1.463   .331  4.253  72,762    965  155,302
PRODCICS 1999/09/21 CICS  1,967 13.468   .001   .006    .907   .000   .000   7,099  4,275  5,942
PRODCICS 1999/09/21 OH@01    11  1.313   .016   .014   1.545   .549  3.000  68,080  1,280  143,877
PRODCICS 1999/09/21 *TOTAL* 2,211 12.079 .004   .007    .969   .037   .463  14,322  3,911  22,368
PRODCICS 1999/09/22           3   .544   .007   .000    .000   .000         6,805    205  5,466
PRODCICS 1999/09/22 CICS    638   .027   .001   .003    .550   .000   .000   7,021      2  6,113
PRODCICS 1999/09/22 OH@01    31  2.634   .042   .004    .903  1.224  9.483  65,482  2,912  152,697
PRODCICS 1999/09/22 *TOTAL*  672   .150   .003   .003    .563   .056   .437   9,717    137  12,872
PRODCICS 1999/09/23         264  1.202   .031   .005   1.041   .571  6.045  79,803  1,419  171,052
PRODCICS 1999/09/23 CICS  2,719  1.459   .001   .005   1.004   .000   .000   7,076  5,610  5,997
PRODCICS 1999/09/23 *TOTAL* 2,983 1.436  .004   .005   1.007   .050   .535  13,513  5,239  20,604
```

Figure 42. Performance Analysis by User ID Report

File Analysis for All Files Report (CMRSAS21)

The CMRSAS21 sample program produces the File Analysis for All Files report. This report has control breaks based on the T6EFN (file name) field.

Generate this report to evaluate file performance.

Note: A CMRDETL data set may contain two forms of T6E records, original and expanded. Any program that you run against T6E file data needs to know which type of record it is processing. CMRSAS21 uses the expanded record flag (field T6EQUAL) to determine whether a given record is expanded or not. This program also uses field T6EOFFFL as a pointer to the file information area. CMRSAS21 illustrates how to process both original and expanded format records in the same file.

Sample Report

```
PROGRAM: CMRSAS21                    FILE ANALYSIS FOR ALL FILES       10:27  FRIDAY, SEPTEMBER 27, 1999  1
CICS          FILE    FILE    TOTAL    TOTAL AVG. WAITS     AVERAGE   AVG. TIME
REGION  RUN DATE   NAME    TYPE    TRANS    WAITS  PER TRAN  WAIT TIME   PER WAIT
PRODCICS  1999/09/23  CMRSTAT  CICS FCT    148     198    1.337     .095      .071
PRODCICS  1999/09/23  CUDCNLOG CICS FCT      1       2    2.000     .035      .017
PRODCICS  1999/09/23  CUISCNTL CICS FCT      2       7    3.500     .088      .025
PRODCICS  1999/09/23  CUPFR01  DB2           1      50   50.000    7.246      .144
PRODCICS  1999/09/23  CUPINIT  DB2           3       6    2.000     .862      .431
PRODCICS  1999/09/23  CUPSSON  DB2           2      82   41.000    2.875      .070
PRODCICS  1999/09/23  DFHRPL   PSEUDO      241   1,829    7.589     .275      .036
PRODCICS  1999/09/23  DFHUECB  PSEUDO        1       1    1.000     .346      .346
PRODCICS  1999/09/23  M2DCNLOG CICS FCT      1       2    2.000     .052      .026
PRODCICS  1999/09/23  M2DPCT   CICS FCT      3       4    1.333     .046      .035
PRODCICS  1999/09/23  M2ISCNTL CICS FCT     12      27    2.250     .078      .034
PRODCICS  1999/09/23  M2PACHP  DB2           4      42   10.500     .811      .077
PRODCICS  1999/09/23  M2PIB21  DB2           2      34   17.000    2.517      .148
PRODCICS  1999/09/23  M2PIG21  DB2           5     112   22.400    3.621      .161
PRODCICS  1999/09/23  M2PINIT  DB2          65     167    2.569     .172      .067
PRODCICS  1999/09/23  M2PMC01  DB2           1      67   67.000    3.647      .054
PRODCICS  1999/09/23  M2PMC06  DB2           4      61   15.250     .354      .023
PRODCICS  1999/09/23  M2PMC21  DB2           2       5    2.500    1.031      .412
PRODCICS  1999/09/23  M2PMC43  DB2           2       8    4.000     .336      .084
PRODCICS  1999/09/23  M2PMD21  DB2          15     507   33.800    2.095      .061
PRODCICS  1999/09/23  M2PMI03  DB2           3      59   19.666    1.624      .082
PRODCICS  1999/09/23  M2PMI04  DB2           1       6    6.000    1.951      .325
PRODCICS  1999/09/23  M2PRA01  DB2           1      18   18.000     .422      .023
PRODCICS  1999/09/23  M2PRA21  DB2           4      50   12.500    2.396      .191
PRODCICS  1999/09/23  M2PRB01  DB2           2      14    7.000     .071      .010
PRODCICS  1999/09/23  M2PRB21  DB2           6     104   17.333    2.566      .148
PRODCICS  1999/09/23  M2PRC21  DB2           1      17   17.000    5.219      .307
PRODCICS  1999/09/23  M2PRD21  DB2           2      84   42.000    5.057      .120
PRODCICS  1999/09/23  M2PRK50  DB2           1       4    4.000    2.383      .595
PRODCICS  1999/09/23  M2PSSON  DB2           5      99   19.800    1.682      .084
PRODCICS  1999/09/23  *TOTAL*  DB2         541   3,666    6.776     .430      .063
```

Figure 43. File Analysis for All Files Report

Rogues Report (CMRSAS23)

The CMRSAS23 sample program creates the Performance Analysis for All Transactions report. This report is also known as the Rogues Report. CMRSAS23 produces the report by

- Reading records from the CMRDETL file

- Calculating task response times

  Note: Response times under 1.000 second are omitted from the report.

- Producing a list of the tasks with the longest response times.

Generate this report to evaluate tasks with the longest response times. Modify the report control statements in the JCL stream to limit the range of input data for the report.

Sample Report

```
PROGRAM: CMRSAS23                 PERFORMANCE ANALYSIS FOR ALL TRANSACTIONS     10:27  THURSDAY, SEPTEMBER 26, 1999  1
 CICS            TRAN              FILE   FILE   DB     DB        STORAGE  PROGRAM
 REGION  RUN DATE  RUN TIME  CODE  RESPONSE  CPU REAL  WAIT TIME   CALLS  WAIT TIME   CALLS STRG HWM OCCUPANCY STRG HWM
PRODCICS 1999/09/23 13:40:50 MC00  30.297   .112   .000  1.000   25.395  38.000 126,992  51,905  195,424
PRODCICS 1999/09/23 10:02:22 MC00  22.509   .139   .118  4.000   10.282  81.000  74,488  19,002  189,744
PRODCICS 1999/09/23 10:03:28 MC00  17.538   .121   .000  1.000   13.143  24.000 121,168  23,743  189,632
PRODCICS 1999/09/23 13:48:21 MC01  15.534   .136   .000  1.000   13.165  56.000 167,504  33,529  189,512
PRODCICS 1999/09/22 08:00:34 PC01  24.136   .105   .000  1.000   18.302  49.000 148,080  36,061  192,680
PRODCICS 1999/09/21 10:59:21 MC00  37.881   .136   .136  4.000   23.105  81.000  74,488  31,827  189,744
PRODCICS 1999/09/18 11:59:31 MC00  16.295   .120   .091  4.000    6.760  81.000  74,312  13,598  189,744
PRODCICS 1999/09/18 11:59:06 MCP2  14.855   .125   .070  1.000     .000    .000  84,664  11,905  152,952
PRODCICS 1999/09/17 11:58:22 MC00  17.686   .156   .000  2.000   12.921  47.000 168,104  29,506  214,288
PRODCICS 1999/09/17 09:06:50 MC00  17.045   .157   .000  1.000   10.664  33.000 165,360  29,066  198,856
PRODCICS 1999/09/17 12:23:54 MC00  14.631   .120   .000  2.000   13.057  49.000 154,792  29,272  217,496
PRODCICS 1999/09/16 10:29:20 PC02  24.159   .124   .000  1.000   20.919  54.000 131,104  40,124  195,440
PRODCICS 1999/09/16 12:34:02 MC00  15.062   .151   .000  1.000    8.983  50.000 153,464  22,786  196,832
PRODCICS 1999/09/16 09:54:31 MC00  14.531   .121   .000  1.000   11.422  42.000 127,408  24,691  195,512
PRODCICS 1999/09/15 14:22:13 JC02  18.682   .118   .000  1.000   15.834  48.000 148,280  31,336  215,496
PRODCICS 1999/09/15 08:16:53 MC00  17.995   .121   .000  1.000   15.335  55.000 123,592  29,806  200,120
PRODCICS 1999/09/14 11:21:51 MC00  33.303   .173   .000  1.000   27.457  60.000 160,616  63,766  178,656
PRODCICS 1999/09/14 12:29:10 PC01  22.661   .077   .000  1.000   19.436  19.000 136,120  35,632  193,528
PRODCICS 1999/09/14 13:58:44 MC00  22.130   .112   .000  2.000   18.572  40.000 138,864  44,330  217,496
PRODCICS 1999/09/10 07:27:13 MC19  15.323   .131   .076  4.000    6.956  81.000  74,488  12,909  189,744
PRODCICS 1999/09/08 02:38:47 PC02  25.308   .086   .000  1.000   22.958  19.000 146,816  39,550  212,960
PRODCICS 1999/09/08 12:59:26 MC00  19.861   .029   .000  1.000     .000    .000  67,344  14,934  181,784
PRODCICS 1999/09/04 10:12:08 MC01  14.605   .110   .000  1.000   11.859  37.000 126,896  25,073  196,664
PRODCICS 1999/09/03 14:53:07 MC00  21.232   .112   .178  4.000   12.337  81.000  74,312  18,052  189,744
PRODCICS 1999/09/17 12:39:15 JC02  18.554   .127   .000  1.000   14.967  46.000 128,656  31,397  198,872
PRODCICS 1999/09/17 12:05:36 MC00  14.800   .137   .159  4.000    7.566  82.000  74,488  12,512  189,744
PRODCICS 1999/09/15 19:01:45 MC00  15.225   .138   .000  1.000   11.878  41.000 127,600  25,607  195,424
PRODCICS 1999/09/14 06:21:25 MC00  15.374   .116   .000  1.000   11.970  39.000 126,608  25,630  194,440
```

Figure 44. SAS Rogues Report

Abended Transaction Roster Report (CMRSAS25)

The CMRSAS25 sample program produces the Abended Transaction Roster report by

- Reading records from the CMRDETL data set
- Listing all transactions with an abend code

The CMRSAS25 program fails and no report is created when there are no abended transactions in the selected data.

Sample Report

```
PROGRAM: CMRSAS25                     ABENDED TRANSACTION ROSTER           10:27 FRIDAY, SEPTEMBER 06, 1999  1
  CICS           TRAN            FILE    FILE    DB     DB       STORAGE  PROGRAM
REGION  RUN DATE RUN TIME  CODE  RESPONSE CPU REAL WAIT TIME    CALLS WAIT TIME   CALLS STRG HWM OCCUPANCY  STRG HWM
PRODCICS 1999/09/05 18:09:07  MC00   3.095   .057   .059   1.000    .000    .000  67,344    2,456  298,480
PRODCICS 1999/09/05 18:11:52  MC00    .120   .014   .000   1.000    .000    .000  74,176       89  242,072
PRODCICS 1999/09/15 13:33:20  MC00   2.714   .063   .035   1.000    .000    .000  67,344    2,098  298,480
PRODCICS 1999/09/15 13:41:31  MC00    .110   .014   .000   1.000    .000    .000  74,176       80  242,072
PRODCICS 1999/09/15 15:52:03  MC00    .321   .014   .000   1.000    .000    .000  66,928      222  242,072
PRODCICS 1999/09/08 13:02:52  MC00   3.171   .067   .068   6.000    .049   2.000  87,208    3,038  193,312
PRODCICS 1999/09/08 14:03:19  MC00    .850   .028   .077   6.000    .064   2.000  87,208      758  193,312
PRODCICS 1999/09/08 14:15:09  MC00    .431   .028   .246   6.000    .037   2.000  87,208      458  193,312
PRODCICS 1999/09/08 14:53:43  MC00    .165   .027   .052   6.000    .006   2.000  87,208      142  193,312
PRODCICS 1999/09/08 15:02:38  CEMT   1.926   .023   .000    .000    .000    .000  30,952  204,839    8,896
PRODCICS 1999/09/09 18:19:39  MC00   3.382   .059   .020   1.000    .000    .000  67,344    2,670  298,480
PRODCICS 1999/09/15 08:11:48  MC00   4.760   .087   .090   6.000   1.120   1.000 116,080    7,269  217,496
PRODCICS 1999/09/15 08:19:29  MC00    .802   .023   .087   6.000    .230   3.000  64,544      618  189,808
PRODCICS 1999/09/15 08:21:03  MC00   2.316   .035   .140   6.000    .064   1.000 112,176    3,692  217,496
PRODCICS 1999/09/15 08:27:57  MC00    .198   .024   .024   6.000    .018   5.000  64,544      136  189,808
PRODCICS 1999/09/15 08:33:50  MC00    .276   .035   .068   6.000    .006   1.000 112,176      338  217,496
PRODCICS 1999/09/15 08:37:47  MC00    .209   .034   .045   6.000    .004   1.000 112,176      243  217,496
PRODCICS 1999/09/15 08:40:13  MC00    .299   .024   .080   6.000    .015   5.000  64,544      217  189,808
PRODCICS 1999/09/17 13:12:22  MC00  12.296   .133   .080   6.000   3.665  12.000 128,848   20,458  214,760
PRODCICS 1999/09/17 13:17:54  MC00   1.699   .089   .052   6.000    .013   5.000 111,056    2,574  214,760
PRODCICS 1999/09/17 13:25:39  MC00    .483   .033   .081   6.000    .042  12.000 124,944      698  214,760
PRODCICS 1999/09/17 13:34:35  MC00   1.069   .033   .329   6.000    .033  10.000 110,816    1,404  214,760
PRODCICS 1999/09/17 13:48:21  MC00   2.044   .077   .548  21.000    .413   2.000 108,440    2,901  214,760
PRODCICS 1999/09/17 14:00:19  MC00 717.335   .014   .000    .000    .000    .000  96,208 1,029,337    8,896
PRODCICS 1999/09/17 14:34:24  MC00 1,712.149  .075   .650  24.000    .000    .000 103,248 2,461,194   54,072
PRODCICS 1999/09/17 14:57:22  CEMT    .145   .003   .000    .000    .000    .000  31,048   28,320    8,896
PRODCICS 1999/09/18 18:46:08  MC00   3.243   .060   .020   1.000    .000    .000  67,344    2,567  298,480
```

Figure 45. Abended Transaction Roster Report

Operational Statistics Report (CMRSAS6F)

The CMRSAS6F sample program generates a report that lists overall transaction performance across CICS regions. The program produces the Operational Statistics report by

- Reading records from the CMRSTATS data set
- Reporting the CPU resource usage and response times of transactions by CICS regions.

The program variable PERIOD controls the processing of CMRSTATS records and the appearance of resulting performance statistics shown in the CMRSAS6F report. Based upon the value of the PERIOD variable, performance statistics produced by each transaction record can be listed as individual report lines or they can be summarized over several fixed intervals. Permissible values for the PERIOD variable are as follows:

PERIOD=1   Produces a report with one print line for each input record.

PERIOD=*xx*   Produces a report with one print line for each *xx* minutes of CICS execution time, where *xx* may be 10, 15, 20, 30, or 60 minutes. The default is 15 minutes.

Sample Report

```
PROGRAM: CMRSAS6F                CICS OPERATIONAL STATISTICS REPORT     12:07 WEDNESDAY, SEPTEMBER 25, 1999  1
CICS                 ALL     TOTAL     AVERAGE     TERMINAL    AVG. TERM    MAXIMUM
REGION    RUN DATE   RUN TIME  TRANSACTIONS  CPU REAL   CPU REAL  TRANSACTIONS  RESPONSE   ACTIVE TASKS
CICSPROD  1999/09/09  08/00/00     118     4.884     0.041       83       0.355         3
CICSPROD  1999/09/09  08/15/00      32     0.844     0.026        1       0.008         3
CICSPROD  1999/09/09  08/30/00      37     1.205     0.033        5       1.165         3
CICSPROD  1999/09/09  08/45/00      31     0.901     0.029        5       0.254         3
CICSPROD  1999/09/09  06/00/00      31     0.896     0.029        0       0.000         3
CICSPROD  1999/09/09  06/15/00      32     0.872     0.027        2       0.010         3
CICSPROD  1999/09/09  06/30/00      32     0.877     0.027        0       0.000         3
CICSPROD  1999/09/09  06/45/00      24     0.865     0.036        0       0.000         3
CICSPROD  1999/09/09  10/00/00      32     0.903     0.028        0       0.000         3
CICSPROD  1999/09/09  10/15/00      31     0.862     0.028        0       0.000         3
CICSPROD  1999/09/09  10/30/00      31     0.860     0.028        0       0.000         3
CICSPROD  1999/09/09  10/45/00      32     0.841     0.026        0       0.000         3
CICSPROD  1999/09/09  11/00/00      24     0.898     0.037        0       0.000         3
CICSPROD  1999/09/09  11/15/00      32     0.862     0.027        0       0.000         3
CICSPROD  1999/09/09  11/30/00      31     0.860     0.028        0       0.000         3
CICSPROD  1999/09/09  11/45/00      31     0.829     0.027        0       0.000         3
CICSPROD  1999/09/09  12/00/00      32     0.890     0.028        0       0.000         3
CICSPROD  1999/09/09  12/15/00      30     1.444     0.048       12       0.515         3
CICSPROD  1999/09/09  12/30/00      31     0.692     0.022        0       0.000         3
CICSPROD  1999/09/09  12/45/00      32     0.827     0.026        0       0.000         3
CICSPROD  1999/09/09  13/00/00      31     0.861     0.028        4       1.572         3
CICSPROD  1999/09/09  13/15/00      31     0.698     0.023        0       0.000         3
CICSPROD  1999/09/09  13/30/00      32     0.595     0.019        0       0.000         3
CICSPROD  1999/09/09  13/45/00      24     0.803     0.033        0       0.000         3
CICSPROD  1999/09/09  14/00/00      32     0.641     0.020        0       0.000         3
```

Figure 46. Operational Statistics Report

Column Descriptions

The following describes the columnar data specific to .

ALL TRANSACTIONS
: Total number of transactions.

TOTAL CPU REAL
: Total amount of CPU real time used during this transaction.

AVERAGE CPU REAL
: Average amount of CPU real time used during this transaction.

TERMINAL TRANSACTIONS
: Number of transactions executed from this terminal during this time interval.

AVG. TERM RESPONSE
: Average response time per transactions executed from this terminal during this time interval.

MAXIMUM ACTIVE TASKS
: AMXT value from the CICS region at the time this data is collected.

Part 4. Performance Reporting Language Reports

This part explains how to create custom reports using the MAINVIEW for CICS Performance Reporting Language (PRL).

Chapter 9. User-Defined Reports (CMRPRL)

You can create custom reports by writing a program with the MAINVIEW for CICS Performance Reporter Language (PRL). With PRL, you select records from the CMRDETL and CMRSTATS data sets that hold CICS transaction and statistical data. Your program determines how these records are processed and formatted in a printed report.

You create PRL reports by executing a batch job that runs a program called CMRPRL and its associated control statements. CMRPRL processes these user-written PRL control statements to select the input VSAM records and to define the format of the report. The most efficient way to execute PRL programs is by running them against small volumes of data during CICS execution or at daily CICS shutdown. Long-term trends can be reported for analysis or debugging by archiving the MAINVIEW for CICS-collected data to tape (see "Archiving Data (CMRPURG)" on page 11), and then specifying the tape as input to the PRL program (see "Selecting Archive Data" on page 152).

Sample PRL programs are located in your BBSAMP library. They are named CMRPRL*nn*, where *nn* is a two-digit suffix that identifies an individual report.

The JCL for submitting the programs is in the CMRL member of your BBSAMP data set. This JCL is distributed as an in-stream procedure. The JCL can be changed and installed in your site's procedure library. You should execute the sample programs to learn PRL and to obtain copies of the default reports.

Performance Reporting Language (PRL)

A typical PRL program consists of the following statements:

Verbs   Perform an action.

Operators   Symbolically indicate the action to be performed in a mathematical expression.

Substrings   For character string evaluation.

Variables   For value substitution. Variables can be symbolic for user-defined data or predefined for system-provided data.

You write these statements in a PRL program to generate a user-defined batch report. The statements can assign a value to a variable, establish a condition, or control PRL execution.

A PRL program is created with an interactive editor as a member of a data set. The member can be part of a PRL procedure library. BMC Software distributes sample PRL programs as members in the BBSAMP data set.

The program is executed as a batch job that defines the input data and type of report produced. Sample JCL is provided in the CMRL member of the BBSAMP data set.

Samples

Table 4 shows a list of PRL sample programs distributed with MAINVIEW for CICS.

Table 4. PRL Samples

BBSAMP Member	Report Type
CMRPRL6	Service Level Analysis Report
CMRPRL7	Service Level Analysis Graph
CMRPRL10	Service Level Analysis Report for Terminal Attached Transactions
CMRPRL12	Transaction Activity Graph
CMRPRL24	DB2 Plan Usage Report
CMRPRL25	SQL Activity Report by DB2 Plan
CMRPX0BD	Program Control Detail Report
CMRPX0BS	Program Control Summary Report
CMRPX0C	Transaction Class Report
CMRPX22D	Terminal Control Detail Report
CMRPX22S	Terminal Control Summary Report
CMRPX30D	Temporary Storage Detail Report
CMRPX30S	Temporary Storage Summary Report
CMRPX43D	File Control Detail Report
CMRPX43S	File Control Summary Report

Expressions and Operators

Use any arithmetic, comparative, or logical operator in a statement expression. An expression combines variables, whole numbers, and character strings with operators. Operators are as follows:

=	(equal to)
>	(greater than)
<	(less than)
¬	(not)
+	(plus)
-	(minus)

*	(multiply)
/	(divided by)
(start-n:length-n)	(substring)

Information about specifying substrings is provided next.

Substrings

Substrings are portions of a character string. They are selected by specifying a numeric range enclosed in parentheses such as

(start-n:length-n)

where

(start-n:length-n)	Is an expression that specifies a count of alphanumeric characters from the beginning of a string and a length:

start-n	Specifies the start of the substring as indicated by n, which is the number of alphanumeric characters from the beginning of a string or referenced field.
length-n	Specifies the number of alphanumeric characters for the substring as indicated by n. This is the length of the substring.

Examples

The following example selects the fourth character of a string and specifies a substring length of three characters. The substring, FEB, is assigned to the M2 variable.

```
SET Q1 = 'JANFEBMAR'
SET M2 = Q1(4:3)
```

The next example shows how substrings can be used to determine a value, in this case the name of the month:

```
SET MONS = 'JANFEBMARAPRMAYJUNJULAUGSEPOCTNOVDEC'
SET MM   = ZDATE(1:2)
SET V1   = MM - 1
SET V2   = V1 * 3
SET V3   = V2 + 1
SET MNTH = MONS(&V3:3)
```

The substring expression ZDATE(1:2) specifies the first character, for a length of two characters, of the mm/dd/yyyy value passed to ZDATE (03 for example). The substring expression, MONS(&V3:3), selects the portion of the character string determined by the value of the V3 variable and limits the substring to 3 characters. If 03/15/2000 is passed to the ZDATE predefined variable, the variables are assigned the following values:

Variable	Assigned Value
V1	2
V2	6
V3	7
MNTH	MAR

Symbolic Variables

PERFORMANCE REPORTER supports symbolic variables. Variables are symbolic characters used as a substitute for a real value. They are predefined or user-defined. User-defined variables can be any alphanumeric character string that is eight bytes long and starts with an alphabetic character. A symbolic variable name can be preceded by an ampersand (&) to distinguish it from a literal, as described in .

Predefined Variables

PRL provides predefined, reserved variables. Use these variables to obtain information about the current CICS environment. The following descriptions of predefined variables show variable characters in uppercase, to indicate that these exact characters must be specified for that variable.

CDATE (Day Date Month, Year)

This variable passes the current date in the form:

Wednesday 11th September, 1999

It can be used to look for certain conditions on a specific day of the week or month, or to print a more descriptive title; for example:

SET TITLE = 'TRANSACTION DAILY REPORT'
SET TITLE1 = &CDATE

ZDATE (mm/dd/yyyy)

The ZDATE variable passes the current date, expressed as mm/dd/yyyy; for example:

SELECT TYPE 6E RECORDS FROM CMRDETL
WHERE CMRDATE = &ZDATE

ZTIME (hh:mm:ss)

The ZTIME variable passes the current time, expressed as hh:mm:ss; for example:

PRINT 'REPORT GENERATED AT' &ZTIME

The following section describes how to create PRL CICS performance reports.

Generating PRL Reports

A JCL batch job executes your PRL program to create a report. An example of the job to run a PRL program can be found in member CMRL of your site's BBSAMP data set. Figure 47 shows an example of the JCL found in CMRL.

```
//jobname JOB user parameters           <-- CHANGE AS NEEDED
/*JOBPARM user parameters                <-- CHANGE AS NEEDED
//CMRL PROC
//PRL     EXEC PGM=CMRPRL
//STEPLIB  DD  DISP=SHR,DSN=CMR.CMRV3.BBLINK   <-- CHANGE AS NEEDED
//SYSPRINT DD  SYSOUT=*
//SYSUDUMP DD  SYSOUT=*
//SYSOUT   DD  SYSOUT=*
//ISYPROG  DD  SYSOUT=*,DCB=(LRECL=80,BLKSIZE=160,RECFM=FBA)
//ISYSOUT  DD  SYSOUT=*,DCB=(LRECL=80,BLKSIZE=160,RECFM=FBA)
//PNLLIB   DD  DISP=SHR,DSN=CMR.CMRV3.BBPLIB  <-- CHANGE AS NEEDED
//CMRDETL  DD  DISP=SHR,DSN=CMR.CMRV3.CMRDETL
//CMRSTATS DD  DISP=SHR,DSN=CMR.CMRV3.CMRSTATS
//SORTWK01 DD  UNIT=SYSDA,SPACE=(CYL,5)       <-- CHANGE AS NEEDED
//SORTWK02 DD  UNIT=SYSDA,SPACE=(CYL,5)       <-- CHANGE AS NEEDED
//SORTWK03 DD  UNIT=SYSDA,SPACE=(CYL,5)       <-- CHANGE AS NEEDED
//   PEND
//RUNSTEP  EXEC CMRL
//SYSIN    DD *
```

Figure 47. JCL Used for PRL Batch Execution

Job Control Statements

The JCL for PRL batch execution is used as follows:

JCL	Use
//procname PROC	Indicates procedural JCL. Defaults can be assigned to parameters in the procedure.
//stepname EXEC	Specifies the name of the program that processes user-written PRL statements, which is PGM=CMRPRL. **Note:** It might be necessary to specify a region size of 2048K.
//STEPLIB	Defines the program library containing the MAINVIEW for CICS load modules (BBLINK). **Note:** Alternatively, you can specify a //JOBLIB statement.
//SYSPRINT	Defines the output class for a sort utility. The name of the DD statement is determined at CICS system generation.
//SYSUDUMP	Defines the output for a job that abnormally terminates.
//SYSOUT	Defines the output class.
//ddname	(Optional) Is the name of the Data Definition (DD) statement. The ddname must start with an alphabetic character, can comprise any alphanumeric characters, and is from one to eight characters in length.

The DD statement defines the output for a user-defined report. The report is allocated as defined by the DD statement if the ddname is the same as the value specified by the PRL SET REPORTID statement, as described in "SET (Assign a Value)" on page 139.

Multiple DD statements can be used to direct the output of multiple reports if the ddname for each output allocation is the same as a REPORTID value, as described in "Routing Report Output" on page 149.

Note: A report DD statement, if used, must have DCB specifications that correspond to the report generated (the LRECL size must be large enough to accommodate all the variables specified with the USING statement).

A DD statement is not needed for report output allocation. If the DD statement is omitted and SET CLASS or SET FORM is not used, PERFORMANCE REPORTER allocates a default output class and form number. The defaults are A for the output class and STD for the form number.

//ISYPROG   Defines an output class for the Performance Reporting Language program (CMRPRL) listing.

//ISYSOUT   Defines an output class for the CMRPRL messages.

//PNLLIB   Defines the data set (BBPLIB) containing the data dictionary (CMRDETL and CMRSTATS members). PERFORMANCE REPORTER uses the data dictionary to generate report column headings for the CMRDETL and CMRSTATS records that you select, as described in "Predefined Data Dictionary Descriptions" on page 150.

//CMRSTATS   Defines a VSAM disk or tape data set containing records of CICS operational statistics (CMRSTATS).

//CMRDETL   Defines a VSAM disk or tape data set containing records for each CICS transaction (CMRDETL).

//SORTWKnn   Identifies one to nine work data sets that can be defined for data sorting. Define *nn* as a numeric value from 01 to 09. A minimum of one work data set is required for each user-written report.

//SYSIN   Defines PRL control statements as input to the batch program.

Basic PRL Verbs to Create a Report

The following verbs generate a basic PRL report. For a complete description of each PRL verb, refer to Chapter 10, "PRL Control Statement Verbs" on page 121.

Verb	Function
SET	Sets the report structure and defines any variables to be processed and reported with the CMRSTATS or CMRDETL data.
SELECT	Specifies the CMRSTATS or CMRDETL data to be processed.
USING	Specifies the data to be reported.
REPORT	Reports the data until end of file.
END	Terminates the PRL program.

You can select and report abend transaction data by combining the basic statements shown in Figure 48 with the JCL described in "Job Control Statements" on page 113

```
SET TITLE = 'TRANSACTIONS THAT ABENDED'
SELECT TYPE 6D RECORDS FROM CMRDETL
USING T6ETRID -
     CMRDATE  -
     CMRTIME  -
     T6EABCD  -
     T6EOPID  -
     T6ETMID  -
     T6ERESP  -
     T6ECPUR
 REPORT
 END
```

Figure 48. Basic PRL Verbs for Creating a Report

PRL Processing

As shown in the previous section, some PRL statements are required for proper report execution. The use of other PRL statements depends upon what you want your report to do. This section describes how PERFORMANCE REPORTER processes a PRL program.

Logic Flow

The sequence that follows shows the order in which PRL statements are processed. Those steps that are noted as optional are user dependent. If the PRL described in an optional step is used, it should be written as sequenced.

1. Set the titles and size of your report (optional).

2. Set any variables that you want as constants (optional).

   A value assigned to a variable before a SELECT statement does not change unless the variable is used again after the SELECT statement.

   Note: If DETAIL, SUMMARY, or USING will be used with a COMPUTE or SET statement, the variable should be defined first (the DEFINE statement).

3. Select the record types as input to your report using the SELECT statement.

4. Qualify record selection with a WHERE statement (optional).

5. Evaluate data with a COMPUTE statement (optional).

6. Specify the data to be reported with a USING statement.

7. Sort the data with ORDER BY (optional).

   If DETAIL or SUMMARY is specified, the first variable of ORDER BY must be the same as the first variable of the USING statement. The records are selected and ordered until end of file, and then reported.

8. Tabulate the data with DETAIL or SUMMARY (optional).

   DETAIL or SUMMARY causes a break in the reporting whenever the first variable of the USING statement changes. A summary is computed at each break.

9. Report each selected record using the REPORT statement.

   Any variables defined after a SELECT statement and before a REPORT statement are assigned a specified value every time a record is reported and a new record selected, until end of file.

10. (Optional) Print footnotes, calculated variables, or comments after all records are reported using the PRINT statement.

    Note: PRINT is processed wherever it is used in the PRL program.

11. End the PRL program (the END statement).

Record Processing

PERFORMANCE REPORTER processes records chosen in the SELECT statement according to the PRL verbs used between the SELECT and REPORT statements until the end of file is reached. These records are processed in chronological order unless an ORDER BY statement is used. If an ORDER BY statement is used, the processing takes place according to the PRL verbs used between the SELECT and ORDER BY statements, and the resulting data is processed by the REPORT statement. The END statement specifies the end of file.

Reporting Selected Data

SELECT requires a REPORT statement to show the results of each record processed by the PRL statements between SELECT and REPORT, until there are no more records; for example.

```
SET TITLE = 'ANALYSIS OF FILE CONTROL TABLE'
SET WIDTH = 132
DEFINE FILFNAM  CHAR 08
DEFINE FILDSRD  EDIT ZZZZ,ZZ9
DEFINE FILDSWRU EDIT ZZZZ,ZZ9
DEFINE FILDSWRA EDIT ZZZZ,ZZ9
DEFINE FILDSDEL EDIT ZZZ,ZZ9
DEFINE FILDSXCP EDIT ZZZ,ZZ9
DEFINE FILDSIXP EDIT ZZZ,ZZ9
*
* ADD STARTING AT CLAUSE TO BEGIN AT A SPECIFIC DATE AND TIME
*
 SELECT TYPE 43 RECORDS FROM CMRSTATS
 WHERE FILDSRD > 0
 OR FILDSWRU  > 0
 OR FILDSWRA  > 0
 OR FILDSDEL  > 0

 USING CMRDATE  -
    CMRTIME  -
    FILFNAM  -
    FILDSRD  -
    FILDSWRA -
    FILDSWRU -
    FILDSDEL -
    FILDSXCP -
    FILDSIXP
 ORDER BY FILFNAM
 DETAIL
 REPORT
 END
```

Figure 49. Detail File Control Table Analysis—Sample PRL

The PRL statements shown in Figure 49 search the CMRSTATS data set for records identified by hexadecimal 43 in the TYPE field. The statements then report each specified field until end of file.

Sorting and Reporting Data

Data shown in PRL reports is in chronological order. Use the ORDER BY statement to change the order. ORDER BY sorts the data by the record variable specified with the statement.

The data is arranged in ascending order (low to high), unless IN DESCENDING SEQUENCE (high to low) is specified. Adding ORDER BY before REPORT in the preceding example, such as ORDER BY FCTNAME, processes each record between SELECT and ORDER BY until end of file, and then sorts each record by file name (FCTNAME) and reports the sorted data. Only one ORDER BY variable can be used per report set.

Note: The ORDER BY variable should be the same as the first USING variable if SUMMARY is used after ORDER BY. If it is not, unexpected results can occur.

Example: Reporting Average Terminal Response Time

The example in shows the use of PRL to average and report terminal response time. The reported results are shown in .

```
** REPORT1 ***********************************************************
*                                                                   *
* RESPONSE TIME SUMMARY FOR ALL TERMINAL ATTACHED TRANSACTIONS -    *
* BASED ON THE CC RECORD TYPE 5 MINUTE RECORDING INTERVAL -         *
*********************************************************************

** PRINT CONTROL SECTION *********************************************
*                                                                   *
*********************************************************************

SET CASE    = 'UPPER'
SET CLASS   = 'R'
SET FORM    = 'STD '
SET LINES   = 50
SET REPORTID = 'REPORT1'
SET WIDTH   = '132'
SET TITLE   = 'TRANSACTION RESPONSE TIME'
SET TITLE1  = 'Terminal-Attached Transactions'
SET TITLE2  = ' '

** USER DEFINED VARIABLES ********************************************
*                              *
* VARIABLES DEFINED BEFORE THE SELECT STATEMENT WILL ONLY BE        *
* INITIALIZED ONCE.                                   *
*                              *
*********************************************************************
*********************************************************************
* INCLUDE A RANGE OF DAYS.  DAYS AFTER 09/11, IE 09/12.  DAYS BEFORE *
* 09/14, IE 09/13.                        *
*********************************************************************
SET FDATE   = '09/19/1999'
SET LDATE   = '09/22/1999'

*********************************************************************
* INCLUDE A RANGE OF TIMES.  HOURS AFTER 7:59 AM AND HOURS BEFORE    *
* 8:00 PM.                         *
*********************************************************************
SET FTIME   = '07:59:00'
SET LTIME   = '20:00:01'
** SELECT CONTROL SECTION ********************************************
*                              *
* BEGIN LOOP: THE SELECT STATEMENT BEGINS A REPORT LOOP FOR EACH     *
*       RECORD UNTIL END OF FILE.                  *
*                              *
*********************************************************************

SELECT TYPE CC RECORDS FROM CMRSTATS
  WHERE CMRDATE > FDATE -
  AND  CMRDATE < LDATE -
  AND  CMRTIME > FTIME -
  AND  CMRTIME < LTIME

** USER AND OTHER PRL VARIABLES **************************************
*                              *
* VARIABLES DEFINED HERE WILL BE ASSIGNED EVERY TIME A RECORD IS     *
* SELECTED.                          *
*                              *
*********************************************************************

COMPUTE AVTRMRSP = T6FRSPTM / T6FTRMCT

USING -
  CMRTIME    -
  AVTRMRSP   -
  T6FTRMCT   -
  T6FSSHWM   -
  T6FSPGIN   -
  T6FSPGOU
REPORT
END
```

Figure 50. Sample PRL Using the COMPUTE Statement

Figure 51 is the result of using COMPUTE as shown in the PRL example in Figure 50 on page 119.

```
REPORT1          TRANSACTION RESPONSE TIME          VERS: REL5.4.0
              TERMINAL-ATTACHED TRANSACTIONS          TIME:   06:27:33
                              DATE: 09/22/1999
                              PAGE:      1

RECORDED              TERMINAL     DSA     PAGE-IN    PAGEOUT
  TIME      AVTRMRSP    TASKS      HWM      COUNT      COUNT
--------  -------------- ----------- ----------- ------------ -------------

12:33:00    0.00000       0        1310     165        26
12:38:01    0.00000       0        1310     172        31
12:43:00    0.25196      32        1321     312        27
12:48:00    0.07513     118        1404     215        67
12:53:00    0.14303      62        1424     293       124
12:58:00    0.12650      42        1421     319        67
13:03:00    3.05300       1        1415     174        18
13:08:00    0.00000       0        1415     100        20
```

Figure 51. Terminal-Attached Transaction Response Time Report

Chapter 10. PRL Control Statement Verbs

The first word of every PRL statement is a verb or a condition (IF, FOR, WHERE) with a verb in the expression. This chapter describes PRL verbs in alphabetical order. Each verb is discussed in a separate section that includes a description of the verb, its uses, syntax, and a coding example.

Table 5. PRL Control Statement Verbs

PRL Verb	Description	See page
COMPUTE	Calculates a mathematical expression	124
DEFINE	Assigns the data characteristics of a variable	125
DETAIL	Creates a tabular summary at each control break	127
DIAGNOSE	Creates a system snap dump and diagnostic report	128
END	Terminates the execution of a PRL program	129
FOR and NEXT	Repeats a series of instructions in a loop	130
GOTO	Branches to another location of a PRL program identified by a label	131
IF and THEN	Tests conditions and makes a program branch according to the outcome	132
LET	Assigns a length to variable 1 from the length of variable 2	133
ORDER BY	Sorts data	134
PRINT	Prints a report	135
REPORT	Creates a report from the data processed by PRL statements	136
SCAN	Reads a variable and performs an editing function on the data	137
SELECT	Selects records from CMRDETL and CMRSTAT data sets	138
SET	Assigns a value to a variable	139
SUMMARY	Creates a tabular summary of the first preceding variable in the USING statement	142

Table 5. PRL Control Statement Verbs (Continued)

PRL Verb	Description	See page
USING	Designates column headings and the data shown in a report based upon record fields	144
WHERE	Qualifies record selection based upon whether a condition is met	145

PRL Control Statement Syntax

PRL is a free-form language with minimal restrictions. It allows approximately 1200 user-defined variables. The number of allowed PRL statements is limited by the available memory. The leftmost word of the statement is the verb.

Conventions

To enter statements and comments:

- Start each statement with the verb. Each of the PRL verbs is described in this section. PRL verbs must be written in uppercase.

- Write the PRL statements between columns 1 through 72. Characters between columns 73 and 80 are ignored.

- Use one or more blank spaces to separate the verb and parameters in a statement.

- Use indentation and blank lines to improve readability.

- Describe statements with comments. Comments are indicated by an asterisk (*) in column 1. Each comment should be on a separate line preceding the statement it describes.

- Use the END verb followed by a semicolon (END;) to indicate the end of a set of PRL verbs that specify an IF-THEN-BEGIN branching routine. Place each verb on a separate line for readability.

To terminate execution:

- The END verb terminates PRL execution.

To use labels:

Labels direct program flow to another statement. They

- Are used with GOTO statements
- Must be unique within the PRL program
- Should be on a separate line
- Can start in any column
- Can be any length
- Can have special characters but no blank characters
- Must end with a colon (:) sign

To specify a literal:

- Enclose a literal in single quotation marks to distinguish it from a variable.

To specify a variable:

- Begin each variable with an alphabetic character; remaining characters for the variable can be alphanumeric. All variables must be eight characters or less. Predefined variables must be written as shown.

- Put an ampersand (&) sign in front of a variable used within a quoted literal. If there is no & preceding any characters enclosed in quotes, all characters are processed as literals. For example:

  SET V1 = 'ABC'
  SET V2 = 'DE'
  SET V3 = '&V1&V2.F'

  sets V3 to ABCDEF. If the last statement in this example used 'V1V2.F', V3 would be set to V1V2.F. (See "SET (Assign a Value)" on page 139.)

To concatenate variables and literals:

- Use a period to concatenate a variable to a literal within single quotes, as shown above.

To assign a numeric value to a variable:

- Use a decimal point, a sign, or commas (no blank characters) with a number used in an expression or assigned as a value to a variable, as described in "SET (Assign a Value)" on page 139. The numeric value is not enclosed in single quotation marks.

  For example:

  SET DAYS = 7

To specify a substring:

- Use (start-n:length-n) to select a portion of a character string, as described in "Substrings" on page 111. Start-n specifies the number of characters from the beginning of the string. Length-n is the length of the substring. The numerics must be delimited with a colon and enclosed in parentheses, such as (4:2), which counts to the fourth character of a string and limits the substring to two characters.

To continue the USING or PRINT statement:

- The USING and PRINT statements may be continued on more than one line. Use a minus (-) sign to continue the statement from one line to another.

PRL Reserved Words

The following list shows PRL reserved words. None of these reserved words should be used as variable names in PRL jobs to create batch reports.

&	ALARM	ALTERVS
AND	BLINK	CCMD
CDATE	COLOR	COMPUTE
CTIME	CURSOR	CYCLE
Dnnnnnnn[7]	DEFINE	DELAY
DETAIL	DIAGNOSE	DUMP
END	EXEC	EXIT
FACT	FCMD	FIND

FOR	GCMD	GET
GOTO	GRAF	HEADING
HELP	HIGHLIGHT	HISTORY
IF	LET	LIN001
LOGOFF	NEW	NEXT
OR	ORDER	PAD
PANELID	PRINT	PROFCNT
PROFMEM	PROFRC	PUT
RAND	REPORT	RETURN
REVERSE	RVIDEO	SCAN
SCMD	SELECT	SET
SUMMARY	SYMBOLISE	SYMBOLIZE
TCOL	TRACE	TRIM
TROW	TUTOR	Unnnnnnn[7]
UNDERSCORE	USING	WHERE
ZCARD	ZCICS	ZCSA
ZCT	ZCURSOR	ZCW
ZDATE	ZERRMSG	ZIFX
ZIFY	ZLAST	ZLINE
ZLINES	ZLOC	ZMEMBER
ZMSG	ZOPTERR	ZPF
ZREQUEST	ZSCREEN	ZSHOW
ZTIME	ZTITLE	ZTRAN
ZUSER	ZWRAP	ZXDT

[7] where nnnnnnn are numbers, Dnnnnnnn are numbers reserved for titles, and Unnnnnnn are numbers reserved for details.

COMPUTE (Calculate Mathematical Expression)

COMPUTE calculates a mathematical expression and places the results in a variable. The expression specified by the COMPUTE statement uses CMRSTAT or CMRDETL records as variables.

The SELECT statement declares the CMRSTAT or CMRDETL records that are used as COMPUTE variables. The SELECT statement usually precedes the COMPUTE statement in a PRL program.

The results assigned to the variable by COMPUTE can be reported by naming the variable in the USING statement. The COMPUTE statement usually appears before the USING statement in a PRL program.

Syntax

COMPUTE V1 = *expression*

where

V1   Is a 1- to 8-byte user-specified alphanumeric character string beginning with an alphabetic character.

expression   Sets the user-specified variable to the results of the calculation as expressed by the = sign with any of the following operators:

+   Adds two record variables together

-           Subtracts one record variable from another

*	Multiplies record variables
/	Divides record variables

Whole numbers with signs, commas, or decimal points can be used with any of these operators. They also can be used alone to represent real numbers.

Usage

When the variable being computed is used with DETAIL, SUMMARY, or USING statements, a DEFINE statement should be inserted before the COMPUTE statement.

The computations on printouts can result in the maximum of a 16-digit mathematical expression.

Example

In the following example, COMPUTE uses a simple addition expression and places the results in TOTALPG. The results of the computation are reported for each selected record until the end of file. The USING statement specifies the user-defined TOTALPG variable as a column heading.

```
SET TITLE = 'DAILY PAGING AND TASK ANALYSIS'
SELECT TYPE 6F RECORDS FROM CMRSTAT

 COMPUTE TOTALPG = T6FSPGIN + T6FSPGOU
 USING CMRDATE T6FSPGIN T6FSPGOU TOTALPG T6FTRNCT

SUMMARY
REPORT
END
```

DEFINE (Define Variable Attributes - Optional)

DEFINE fixes the picture of a variable for the duration of the PRL run. This occurs on the first use; it is ignored for subsequent uses. The use of this verb causes the variable attribute length and decimal significance to be unalterable. In addition, it provides you with the means to specify an edited pattern for display of fields. This is particularly useful if the variable is to appear on the report with USING.

This function also can be particularly useful when used with the SUMMARY or DETAIL functions. DEFINE ensures that the column width accommodates the totals without decimal truncation or alteration.

DEFINE can be used only with alphabetic or numeric fields. It cannot be used with DATE, TIME, or HEX fields.

Syntax

DEFINE *variable* {CHAR *nn*|EDIT ZZ,ZZ9.99}

where

variable	Is a symbolic variable. The symbolic variable can be predefined or user-defined. User-defined variables must start with an alphabetic character, can be up to eight characters long, and can comprise any alphanumeric character. For a further discussion on variables see "SET (Assign a Value)" on page 139.
CHAR *nn*	Identifies the verb as a DEFINE for a character variable; *nn* specifies the number of characters to be shown.
EDIT ZZ,ZZ9.99	Identifies the verb as a DEFINE for a numeric variable; ZZ,ZZ9.99 are symbols representing the digits in the number. The description can contain up to 25 digits. The following symbols are supported:

'.'	Decimal placement and representation
,	Numerical editing
9	Decimal significance
'Z'	Decimal significance; zero suppresses digits
' '	Blanks
-	Sign characters
Note:	The edit pattern should be at least as long as the default title for that field.

Usage

Use the DEFINE statement only once per variable. Define the variable before using it in another statement.

A DEFINE statement should be inserted before a COMPUTE or SET statement when the COMPUTE or SET statements are used with DETAIL, SUMMARY, or USING.

Example

```
DEFINE T6ERESP EDIT ZZ9.99
SELECT TYPE 6E RECORDS FROM CMRDETL
USING T6ETRID T6ERESP
SUMMARY
REPORT
END
```

DETAIL (Tabulate and Summarize Each Record)

DETAIL requests a tabular summary at each control break based on the first variable mentioned in the USING statement that precedes it. A count is maintained for each item that has a common value matching the first variable. When the value of the first variable changes, a control break occurs and the totals and averages are printed. If neither SUMMARY nor DETAIL is used, a tabular report with no control breaks is printed.

Syntax

DETAIL

Usage

DETAIL can be coded only after the USING statement but prior to REPORT. If ORDER BY is used, DETAIL must follow this statement.

Example

The report shown in Figure 52 is produced when the following PRL is executed:

```
SET TITLE = 'DETAIL TRANSACTION ROSTER'
SELECT TYPE 6E RECORDS FROM CMRDETL
  USING CMRDATE CMRTIME T6ETRID T6ERESP T6ECPUR T6ETMID T6EOPID
  DETAIL
REPORT
END
```

```
REPORT1         DETAIL TRANSACTION ROSTER         VERS:  REL3.5.0
                              TIME:  06:27:25
                              DATE: 09/17/1998
                              PAGE:       1

RECORDED   RECORDED TRAN          RESPONSE    CPU REAL TERM OPR
  DATE       TIME   NAME   TOTAL     TIME       TIME ID.  ID.
---------- -------- --------------- ----------- ------------ ---- ---

09/17/1998 10:21:12 ETI0             3.511       0.067
09/17/1998 10:31:12 ETI0             0.186       0.021
           ETI0       2    3.697      0.088
                   AVG *****  1.848      0.044

09/17/1998 10:21:23 ETMO             5.633       0.321 L06B R01
09/17/1998 10:22:31 ETMO             0.906       0.078 L06B R01
           ETMO       2    6.539      0.399
                   AVG *****  3.269      0.199

09/17/1998 10:21:33 ETM2             5.504       0.174 L06B R01
09/17/1998 10:22:14 ETM2             1.353       0.155 L06B R01
09/17/1998 10:22:26 ETM2             1.099       0.138 L06B R01
           ETM2       3    7.956      0.467
                   AVG *****  2.652      0.156
```

Figure 52. Detail Report

DIAGNOSE (Perform Diagnostics)

DIAGNOSE forces entry into the PRL diagnostic environment with a system snap dump to produce a diagnostic report that helps BMC Software isolate any problems that might occur. The report shows

- Name
- Length
- Assigned value
- Data type (E is numeric; blank indicates characters)
- Significant decimal places (3 is .001)

Syntax

DIAGNOSE

Usage

The DIAGNOSE statement should be used only for PRL program execution analysis.

Example

The following example shows the use of DIAGNOSE to analyze a previously executed PRL program. DIAGNOSE is added before the END statement.

```
SET TITLE = 'MAINVIEW for CICS COMMON SYSTEM AREA (CSA) ANALYSIS'
SELECT TYPE 11 RECORDS FROM CMRSTAT

  USING CMRDATE CMRTIME CSATSKCT CSAGTMAN CSAFRMAN -
    CSADUMPS CSASOSCT
  ORDER BY CSATSKCT

REPORT
*****************************************************************
* Insert DIAGNOSE statement before END if PRL does not execute  *
* properly.  DIAGNOSE produces system snap dump and list of     *
* variable pool elements showing variable attributes.          *
*****************************************************************
DIAGNOSE
END
```

END (Stop Execution)

END terminates PRL execution.

Syntax

END

Usage

Use END

- To indicate PRL report termination.

- In the THEN clause of an IF statement to force termination of PRL execution. For example, to get only the first 50 selected records, use END with IF-THEN as follows:

  SET Y = Y + 1
  IF Y > 51 THEN END

  (See the example for "IF and THEN (Do Statement to Test Conditions)" on page 132.)

- After DIAGNOSE.

Example

```
SET TITLE = 'TRANSACTIONS THAT ABENDED'
SELECT TYPE 6D RECORDS FROM CMRDETL
USING T6ETRID -
    CMRDATE  -
    CMRTIME  -
    T6EABCD  -
    T6EOPID  -
    T6ETMID  -
    T6ERESP  -
    T6ECPUR
 REPORT
 END
```

FOR and NEXT (Do a Set of Statements on a Condition)

FOR and NEXT perform a series of instructions a given number of times in a loop and cause a variable to be used repeatedly.

Syntax

FOR V1 = V2 TO V3
statement
statement
NEXT V1

where

V1	Is the counter value. The value should be defined using the SET verb.
V2	Is the initial value of the counter. The length attribute of V2 must be the same as the V3 length attribute.
V3	Is the final value of the counter. If a variable name is used, it must have an ampersand (&) prefix.
statement	Can be any PRL statement.

The set of statements following the FOR statement are executed until a NEXT statement is encountered and a specific condition is met. There is at least one execution of the series of statements, even if the final counter value is less than the initial value. After each execution, the V1 value is incremented by 1. Processing loops back to the beginning of the set of statements after the FOR statement until the final value is reached. When the counter value is greater than the final value, the statement following the NEXT statement is executed.

Usage

You can

- Use FOR and NEXT anywhere within the PRL. The FOR-NEXT loop usually follows a SELECT statement.

- Nest FOR and NEXT loops, as shown in the following example. The counter within each nested loop must have a unique variable name. The NEXT statement for the inner FOR-NEXT loop must appear before the NEXT statement for the outer FOR-NEXT loop.

- Use any of the variables described in "Symbolic Variables" on page 112 or "Predefined Variables" on page 112.

Example

FOR &X = 001 TO 100
 FOR &Y = 001 TO 100
   SET Z = X + Y
 NEXT &Y
NEXT &X

GOTO (Continue Processing at Label with : Suffix)

GOTO branches to the PRL marked by a label ending with a colon (:) sign. Execution continues at the first statement following the label.

Syntax

GOTO *label*

where

GOTO   Directs program flow to another set of PRL statements.

label   Is the name of a set of PRL statements. The label must have a colon (:) suffix.

The label is alphanumeric, can include special characters but no blank characters, and must end with a colon (:) sign. The label should be on a line by itself and must be unique. It can be any length and can start in any column, as follows:

```
IF V1 = V2 THEN GOTO LABEL
     statement
     statement
LABEL:
     statement
     END
```

Example

```
SELECT TYPE 6E AND 6D RECORDS FROM CMRDETL
   WHERE T6ETMID ¬= '    '
  IF TYPE = '6D' THEN GOTO ABEND
  SET CIC = T6ETRID(1:1)
  IF CIC = 'C' THEN GOTO CICS
ABEND:
  SET REPORTID = 'TRANAB'
  SET TITLE = 'TRANSACTIONS THAT ABENDED'
  SET CLASS = 'R'
  USING CMRDATE CMRTIME T6ERESP T6ECPUR T6ETRID T6EOPID T6ETMID
  REPORT
CICS:
  SET REPORTID = 'CICSTRAN'
  SET TITLE = 'CICS-SUPPLIED TRANSACTIONS'
  SET CLASS = 'R'
  SET HH = &CMRTIME(1:4)
  SET TIME = '&HH.0  '
  USING TIME T6ETMID T6EOPID T6ECPUR T6ETCWT T6ETRID T6ERESP
  DETAIL
  REPORT
  END
```

IF and THEN (Do Statement to Test Conditions)

The IF and THEN statements test conditions. The results of the test determine the action to be taken by the PRL program.

Syntax

IF *expression* THEN *statement*|BEGIN

where the IF-THEN statement is all on one line, and

expression	Consists of variables, whole numbers, or character strings connected by operators (see "Expressions and Operators" on page 110).

> **Note:** The first parameter is used to define the length in an alphabetic compare.

THEN	Is required and can be followed by a PRL statement or a BEGIN clause terminated by an END statement with a semicolon (;) suffix.
statement	Can be any of the following PRL statements: BEGIN, GOTO, END, SET, or EXEC; for example:

IF V1 = V2 THEN SET V3 = V4

BEGIN	Indicates there is a series of PRL statements following the IF-THEN condition. More than one statement can be nested within the IF condition when a true condition results from the test. The end of the statements is signaled by an END statement followed by a semicolon (END;):

IF V1 = V2 THEN BEGIN
    statement
    statement
    END;

The semicolon (;) suffix distinguishes this END statement from an END that terminates PRL execution.

END without a semicolon (;) suffix terminates PRL execution as follows:

IF V1 > V2 THEN END

The entire report generation sequence can be coded in an IF statement. For example, to produce a report that outlines, among other things, the 20 busiest CPU users in your system, keep a variable called COUNT and increment it just before REPORT. Follow this with a conditional statement that terminates the job when 20 are reported.

Example

```
SET TITLE = 'HIGHEST 20 USERS OF CPU TIME - &ZDATE'
SELECT TYPE 6E RECORDS FROM CMRDETL
WHERE &CMRDATE = &ZDATE
USING T6ETRID -
    CMRDATE  -
    CMRTIME  -
    T6EUSER  -
    T6ETMID  -
    T6ERESP  -
    T6ECPUR
 ORDER BY T6ECPUR IN DESCENDING SEQUENCE
 SET &COUNT = &COUNT + 1
 IF COUNT > 20 THEN END
 REPORT
END
```

LET (Set Variable Length)

LET, in combination with the LENGTH parameter, sets variable1 in a statement to the length of variable2. As a result, the first variable becomes a 3-digit value between 000 and 256, depending on the length of the second variable.

Syntax

LET *variable1* = LENGTH *variable2*

where

variable1 Is the name of a variable or array element to receive a length value. *variable1* can be a character string, a numeric variable, or an array element.

variable2 Is the variable whose length will be assigned to *variable1*.

Example

The following example keeps the length of file and transaction names to 70 characters or less:

LET &LTR = LENGTH &TRNID(&K)
IF &LTR > 70 THEN GOTO LAB3

ORDER BY (Sort Selected Records)

ORDER BY sorts variables into a different order from that presented by the SELECT verb.

If the report is to be in chronological order, there is no need to sort your data. This is because all of the records are time-stamped with CMRDATE and CMRTIME. Occasionally, you may want to arrange the report by transaction code or by response time. This is useful if you are interested in summaries based on a group of transactions, a range of execution periods, or whatever you have in mind.

The ORDER BY statement relies upon the IBM Sort Facility to pass user data to a sort exit as the second parameter in the list. Other sort facilities can be used if they are compatible with the IBM Sort Facility (use standard sort exits E15 and E35).

The ORDER BY statement can be overridden with your own sort control statement, such as

```
//SORTCNTL DD *
 options - -
/*
```

Syntax

ORDER BY v1 [IN DESCENDING SEQUENCE]

Usage

- Only one ORDER BY statement is allowed per report set.

- Only one variable can be specified with ORDER BY. It can be either a user-defined or predefined variable.

- If DETAIL or SUMMARY is used, the ORDER BY variable must be the same as the first variable in the USING statement, as shown below.

- IN DESCENDING SEQUENCE orders the data from high to low values.

Example

```
SELECT TYPE 6E RECORDS FROM CMRDETL
USING T6ETRID -
    T6ERESP -
    T6ECPUR -
    T6EFCWT -
    T6ESHWM -
    T6EPAGCT
ORDER BY T6ETRID
SUMMARY
REPORT
END
```

PRINT (Print One-Line Message)

PRINT causes a one-line message, the value of a variable, or a combination of these to be printed in a report whenever the PRINT statement is processed.

Syntax

PRINT [V1|'*string*'|V1..Vn '*string*'|*fieldname*]

where

PRINT	With no parameters, prints a blank line.
V1	Is a variable that is assigned a value by the SET statement. The value of the variable is printed.
'*string*'	Is a literal character string enclosed in single quotes. The string can contain alphanumeric, blank, or special characters.
fieldname	Is the name of a field in a CMRDETL or CMRSTAT record (see Appendix B, "CMRDETL: Transaction Detail Records" on page 173). The field value is printed.

Example

```
SET DOWN  = '      * * * MAINVIEW for CICS NOT ACTIVE * * *'
SET TITLE = 'MAINVIEW for CICS GLOBAL PERFORMANCE ANALYSIS'
SELECT TYPE 6F RECORDS FROM CMRSTAT
USING CMRDATE CMRTIME T6FSUCP T6FSTCCP T6FSJCCP T6FSKCCP T6FSOSCP
  IF T6FSFLAG = 'L' THEN BEGIN
       PRINT
       PRINT DOWN
       PRINT
        END;
  REPORT
 END
```

REPORT (Report Selected Record)

REPORT produces a report that shows the results of each record processed by the PRL statements between SELECT and REPORT. Each field specified by the USING statement is reported until end of file.

The default report size is 50 lines x 132 print positions. The report size can be changed by SET LINES = and SET WIDTH = as shown by "SET (Assign a Value)" on page 139. The width of the body of the report is determined by the record fields and variables specified in the USING statement (see "USING (Designate Column Headings and Record Fields)" on page 144.)

The statement following REPORT receives control when all selection criteria presented by the SELECT verb have been met and the file has reached its end.

Syntax

REPORT

Example

```
SELECT TYPE 6F RECORDS FROM CMRSTAT
 USING CMRDATE T6FSPGIN T6FSPGOU
 SUMMARY
 REPORT
END
```

SCAN (Scan a Variable Field)

SCAN scans a variable and edits it.

Syntax

SCAN &V*n* {REMOVING|REPLACING}
    {LEADING|ALL}
    {BLANK|NULL|c}
    [WITH|[{BLANK|NULL|*c*}]]

where

&V*n*	Is the name of a defined variable that contains the target data to be edited.
REMOVING| REPLACING	Indicates the editing to be performed on the data of the target variable.
LEADING|ALL	Edits the leading or trailing data to one byte or all the data as indicated.
WITH	Must be used if REPLACING is specified.
BLANK	Specifies blank characters.
NULL	Specifies null characters.
c	Represents any alphanumeric characters.

Example

```
SET BB = '&vbarSELECT TYPE 6F RECORDS FROM CMRSTAT
 WHERE CMRDATE = '09/17/1998'
  SET Y = T6FTRNCT / 5
  SET Y = Y + 1
  IF Y > THEN 51 THEN SET Y = 52
  SCAN &Y REMOVING LEADING 0
  SET &X = BB(1:&Y)
 USING CMRDATE CMRTIME T6FTRNCT X
REPORT
END
```

SELECT (Find Record Type)

SELECT picks out records from CMRDETL or CMRSTAT by the record type. Optionally, the starting point of the SELECT can be qualified with a date and time.

Syntax

SELECT TYPE *xx* RECORDS FROM *dataset*
SELECT TYPE *xx xx* RECORDS FROM *dataset*
SELECT TYPE *xx* AND xx RECORDS FROM *dataset*
SELECT TYPE *xx xx xx ... xx* RECORDS FROM *dataset*
SELECT ALL RECORDS FROM *dataset*
SELECT TYPE *xx* RECORDS FROM *dataset* STARTING AT *time* ON *date*

where

TYPE *xx* or ALL

> Names the specific records to be used from the MAINVIEW for CICS CMRSTAT or CMRDETL data sets; *xx* is the hexadecimal identifier of the record as described in "Collecting Report Data" on page 7 and shown in Appendix B, "CMRDETL: Transaction Detail Records" on page 173. As shown in the syntax example, more than one record type can be selected from a data set with a single SELECT statement. A maximum of nine record types can be specified on one line.

> ALL selects all record types from a single data set. The specified records must reside in the same data set. Type 6E and 6D records reside in the CMRDETL data set, while all other record types are in CMRSTAT. A maximum of nine specific record types can be selected.

RECORDS FROM

> Is a required clause.

dataset

> Can be either CMRSTAT or CMRDETL on tape or disk, as defined by the JCL. PERFORMANCE REPORTER searches the data set for a record ID that matches the value specified by SELECT TYPE *xx* and makes those records available for PRL processing.

STARTING AT *time* ON *date*

> Specifies when reporting is to begin. MAINVIEW for CICS performance data is arranged in chronological order with date and time stamps. The date is always represented as mm/dd/yyyy and the time as hh:mm:ss. To concentrate on a particular time period, add this parameter on the end of the SELECT statement. The selection process will not start until the first record is found. Today's date is given by using the variable ZDATE. The current time is given by the variable ZTIME.

For example, the following statement reports CICS activity since the start of business today:

SELECT TYPE 6F RECORDS FROM CMRSTAT STARTING AT 08:00:00 ON &ZDATE

This job can be run on any day and the start date does not need to be changed.

> **Note:** If records are to be selected from an archive tape, STARTING AT has no effect and should not be used. Records can be selected from an archive tape by using WHERE as follows:
>
> SELECT TYPE 6F RECORDS FROM CMRSTAT
>   WHERE CMRDATE = '09/17/1998'

Usage

Only one SELECT control statement per CMRDETL or CMRSTAT per run can be specified in each PRL program. You could receive unpredictable results if you do use more than one SELECT control statement in your program.

Example

```
SET TITLE = 'D E T A I L   T R A N S A C T I O N   R O S T E R'
 SELECT TYPE 6E RECORDS FROM CMRDETL
   USING CMRDATE CMRTIME T6ERESP T6EFCWTC T6ETRID T6ENETNM
 REPORT
 END
```

SET (Assign a Value)

SET, in combination with the = operator, assigns a value (characters or numerics) to a variable. It can be used to specify report headings and the contents of variables and to control the printing of the report.

Syntax

SET *variable* = *expression*

where

variable	Is a symbolic variable. The symbolic variable can be predefined or user-defined. A user-defined variable must start with an alphabetic character, can be up to eight characters long, and can comprise any alphanumeric character. It can be preceded by an ampersand (&) to distinguish it from a literal.
expression	Can be variables, whole numbers, or character strings alone or in combination with operators (see "Expressions and Operators" on page 110).

A value assigned to a variable before a SELECT statement does not change.

Usage

When the variable being set is used with DETAIL, SUMMARY, or USING statements, a DEFINE statement should be inserted before the SET statement.

A symbolic variable can be set to

• The value of another variable, which can be symbolic or predefined (see "Predefined Variables" on page 112).

SET WEEK = &DAYS

Note: Ampersand (&) is a reserved word and should not be used as a variable value. In other words, &a is a variable while & or && is not.

- A character string.

  Enclose characters in single quotation marks. Begin a variable inside quotation marks with an ampersand. Use a period to delimit a variable from a literal. The characters can be a direct substitute for the variable, a substring, or concatenated with other variables, as follows:

  Substitute ABCDEF is substituted for the symbolic variable, ALPHA.

  SET ALPHA = 'ABCDEF'

  Substring In this example, B is assigned to the symbolic variable, BETA. The substring expression specifies that the second character of the string be substituted for &ALPHA, for a length of one character.

  SET BETA = &ALPHA(2:1)

  Concatenation Character strings can be concatenated with other variables and literals. Identify variables with an ampersand prefix and add a period at the end of the variable to delimit it from a literal, as follows:

  SET ALPHA = 'A'
  SET DELTA = 'DEF'
  SET AD   = '&ALPHA.BC&DELTA'

  The AD variable is assigned a value of ABCDEF.

  If an ampersand prefix or a period suffix is not used to delimit the variables from the literals, the characters are assigned to the AD variable; for example:

  SET AD   = 'ALPHABCDELTA'

  In the above example, the AD variable is assigned a value of ALPHABCDELTA.

- A numeric integer to be used as a counter. For decimal arithmetic, use the COMPUTE verb.

  SET DAYS = 7

  A number can be an integer from 0 to 9. The number can have one decimal point, a sign, or commas, but it cannot contain any blank characters or be enclosed in single quotation marks.

  A numeric value also can be assigned to a variable as a counter. The number of digits is initially set to 00000 as a default. When 99999 is reached, the value resets to 00000. The default digits can be changed with the SET statement. For example, SET number = 01 establishes a two-digit counter that, at 99, resets to 00; for example:

  SET NUMBER = 01
  SET V1 = V2 + NUMBER

  Note: SET does not keep track of decimals or signs.

Report output can be set as follows (all specified values must be enclosed in single quotation marks):

CASE = Specifies that the output characters be in uppercase or mixed case. The default is uppercase. SET CASE must precede other PRL statements and is written as

SET CASE = 'MIXED'
SET CASE = 'UPPER'

CLASS = Specifies the output class for the report. It is a 1-byte, site-defined character. A is the default.

> **Note:** Report output also can be allocated with a DD statement, as described in "Routing Report Output" on page 149, that has the same name as the value of SET REPORTID.

FORM = Specifies four characters defining the type of paper on which the report is to be printed. STD is the default.

> **Note:** Instead of specifying SET FORM, a DD allocation that has the same name as the value of SET REPORTID can specify the form type.

LINES = Specifies the report page length. The default is 50 lines. The minimum value is 001 and the maximum value is 255.

REPORTID = Specifies a 1- to 8-character alphanumeric ID for the report. The ID is in the upper left corner of the report. The execution jobname is the default.

If a DD output allocation has the same name as the user-specified value for REPORTID, the report is allocated to the DD output, as described in "Routing Report Output" on page 149.

TITLE = Specifies the first of four lines to be generated by PRL on every page. Specify any alphanumeric string up to a maximum of 80 characters. The default is MAINVIEW for CICS. The title is centered automatically at the top of each page.

TITLE1 = Specifies a subtitle for the second line (TITLE1) or third line
TITLE2 = (TITLE2) of every page. The subtitle length is 80 characters. Each specified subtitle is centered automatically at the top of each page. Blank is the default.

WIDTH = Specifies the width of the report title. The default is 132 print positions. From 32 to 255 print positions can be specified for your report. Report titles are adjusted to the specified width. The USING statement determines the column data to be reported. The reported data is truncated if it does not fit within the specified width. If USING specifies only a few variables and the WIDTH is at a large value, the column data is reported as formatted by the PNLLIB data dictionary. It is not adjusted to the specified WIDTH value.

ZHEADING = Specifies the print characteristics of the column headings of PRL tabular reports. If ZHEADING is not specified, the default prints each column heading three times without a carriage return. The default should be used

with line printers to create bold text in the column headings by printing each word three times.

Use ZHEADING = 'SINGLE' to create viewable online reports. Use ZHEADING = 'NONE' to create PRL reports without column headings.

Example

```
SET CLASS = 'R'
SET FORM = 'C012'
SET WIDTH = 70
SET LINES = 58
SET REPORTID = 'CICSM16'
SET TITLE = 'MAINVIEW for CICS - Monthly System Status'
SET TITLE1 = '     User Logon Times        '

  SELECT TYPE 6E RECORDS FROM CMRDETL
    WHERE  T6ETMID   NOT EQUAL '  '
       SET COUNT = COUNT + 1

  USING CMRDATE CMRTIME T6ETRID T6ERESP T6ECPUR T6ETMID T6EOPID
  REPORT
  PRINT COUNT
 END
```

SUMMARY (Total and Average Selected Records)

SUMMARY requests a tabular summary based on the first variable mentioned in the USING statement that precedes it. A count is maintained for each item that has a common value matching the first variable. Only the totals appear on the report, followed by an average, for each and every numeric variable on the print line.

Even after all selection criteria have been met, each record generates a separate report line; the report could become quite large if a large volume of data is being processed.

If you provide summaries, your nominated summary fields will gather and condense all detail records into two lines of print for each control break.

If neither SUMMARY nor DETAIL is used, a tabular report is printed.

Syntax

SUMMARY

Usage

SUMMARY can be coded only after the USING statement but prior to REPORT. If ORDER BY is used, SUMMARY must follow this statement.

Note: Character data can only be included in a summary report if it is specified as the first USING variable.

Example

The following example produces the report shown in Figure 53 on page 143:

```
SET CLASS = 'R'
SET REPORTID = 'RES2RPT2'
SET TITLE = 'SUMMARY TRANSACTION ROSTER'
SELECT TYPE 6E RECORDS FROM CMRDETL
  USING CMRDATE T6ERESP T6ECPUR T6EDIST T6EFCWT T6ESUST T6ETSWT
  SUMMARY
REPORT
END
```

```
RES2RPT2       SUMMARY TRANSACTION ROSTER      VERS:  REL5.3.0
                        TIME:  16:21:18
                        DATE: 09/17/1998
                        PAGE:      1

 RECORDED        RECORDED TRAN  RESPONSE  CPU REAL TERM OPR
  DATE     TOTAL   TIME NAME     TIME     TIME ID. ID.
  ----    ------- -------- ----  -------- -------- ---- ---

 1998/09/17    2            4.808   0.248
     AVG *****            2.404   0.124

 1998/09/17    2            1.495   0.297
     AVG *****            0.747   0.148
```

Figure 53. Summary Report

USING (Designate Column Headings and Record Fields)

USING designates column headings and record contents for each named record field specified with USING. Only one USING statement is required. The USING statement selects the column heading from an internal data dictionary. To specify your own column heading that is not in the dictionary, set a variable to a literal (maximum of eight alphanumeric characters). Then specify the variable name in the USING statement, as described in "User-Defined Data" on page 151. Column headings are printed on lines 5 and 6, with the corresponding underlines on line 7 of the report.

Column headings and data appear on the report line in the order specified by the USING statement, reading from left to right. If an undefined field name or variable is specified, it does not appear on the report. If the column headings do not fit within the page width, the headings are truncated.

Syntax

USING V*n* . . . V*n*

where V*n* represents the record field names shown in Appendix B, "CMRDETL: Transaction Detail Records" on page 173 or user variables defined by SET.

Note: Depending on the record field widths, use of more than eight names can cause truncation. More than 11 field names generally cause both truncation and unpredictable results.

Usage

To continue a list of variables on the next line, use a hyphen (-). A hyphen can be used only to continue variables to another line, not to continue statements.

Note: The variables listed on the USING statement have implied DEFINE statements associated with them that are used unless a previous DEFINE statement for the variable has been specified.

USING fixes the meaning of a variable for the duration of the PRL run. This occurs on the first use; subsequent uses are ignored. The effect of the USING statement is to make the variable attribute length and the decimal significance unalterable.

If the variables listed in a USING statement require special editing characteristics, consider placing a DEFINE statement before the USING statement. For further information on DEFINE, see "DEFINE (Define Variable Attributes - Optional)" on page 125.

The maximum number of variables in a USING statement is limited to the number of variables that can fit on a print line. The default print line is 132 characters long.

To change the width of the print line, use

SET WIDTH=*xxx*

You can increase the size of the print line to up to 255 print positions.

Example

```
SET TITLE = 'SUMMARY TRANSACTION ROSTER'
SET TITLE = 'MAINVIEW for CICS PAGE ALLOCATION MAP ANALYSIS'
SELECT TYPE 17 RECORDS FROM CMRSTAT
USING CMRDATE CMRTIME -
        PAMCTLP -
        PAMTELP -
        PAMMIXP -
        PAMISOP -
        PAMSHRP -
        PAMRPLP -
        PAMPGMP -
        PAMDSAT -
        PAMTREE -
        PAMGETVT
  REPORT
  END
```

WHERE (Qualify Record Selection)

WHERE qualifies record selections. If the condition is matched, control flows to the next statement.

Syntax

WHERE V*n* = *value*

where

V*n*   Is the field name of a CMRSTAT or CMRDETL record (see Appendix B, "CMRDETL: Transaction Detail Records" on page 173).

value   Can be a literal character string or a defined variable.

WHERE is written after the SELECT statement and is used with any of the following operators to qualify a selected record:

=   (equal to)

>   (greater than)

<   (less than)

¬ =   (not equal to)

¬ <   (greater than or equal to)

¬ >   (less than or equal to)

AND

OR

Usage

The argument in the WHERE clause can be repeated with other arguments, appropriately using the operators AND and OR. Only one variable can be qualified per line. The following example restricts the selection to activity by user DJD, at terminal SC32, with a response time that is greater than two seconds:

```
SELECT TYPE 6E RECORDS FROM CMRDETL
WHERE T6ETMID = 'SC32'
 AND T6EOPID = 'DJD'
 AND T6ERESP  > 2
```

Note: AND must be used if NOT (¬) is specified with another qualifying condition for WHERE; for example:

```
SELECT TYPE 6E RECORDS FROM CMRDETL
WHERE CMRDATE = '09/27/1998'
 AND T6ETMID ¬= '    '
```

Alternative data can be selected for the same variable by adding an OR operator to the right of the WHERE expression; for example:

```
SELECT TYPE 6E RECORDS FROM CMRDETL
 WHERE T6ETRID = 'CSSN' OR 'CSSF' OR 'CSTT'
```

This example selects 6E records created by transactions CSSN, CSSF, or CSTT.

This same WHERE condition could also be repeated with OR as follows:

```
WHERE T6ETRID = 'CSSN'
 OR   T6ETRID = 'CSSF'
 OR   T6ETRID = 'CSTT'
```

An AND operator with WHERE combines specific data from selected records. The following example selects 6E records that had activity on 09/27/1998 between 10:00 AM and 11:00 AM:

```
SET DATE = '09/27/1998'
SET FTIME = '09:59:59'
SET LTIME = '11:00:01'
SELECT TYPE 6E RECORDS FROM CMRDETL
 WHERE CMRDATE = DATE
 AND CMRTIME > FTIME
 AND CMRTIME < LTIME
```

These PRL statements select data from 6E records based upon the date and time specified in the CMRDATE and CMRTIME fields that

- Match the 09/27/1998 date assigned to the DATE variable.

- Have a time stamp (recorded in the CMRTIME common header field) greater than the time assigned to the FTIME variable (start at 10:00).

- Have a time stamp less than the time assigned to the LTIME variable (end at 11:00).

Any number of AND or OR conditions can be used with a WHERE statement. However, a condition must be defined with either all ANDs or all ORs because combining them may create a logically ambiguous condition.

If ¬= is used with more than one AND or OR clause, the not condition inverts the logic and should be avoided:

•   Use an all positive condition.

•   Relegate a single ¬= to the last clause.

The following example shows the use of OR statements to select alternative data from the same field (T6ETRID - transaction identifier). An AND statement adds another required condition to the WHERE condition that further restricts data collected from the field. The expression ¬= is used last and qualifies the record selection to identified terminals.

```
SELECT TYPE 6E RECORDS FROM CMRDETL
 WHERE T6ETRID = 'CSSN' OR 'CSSF' OR 'CSTT'
 AND T6ETMID ¬= '    '
```

Note: Use AND last for NOT (¬) conditions.

Example

```
SET WIDTH  = '80'
SET TITLE  = 'T E R M I N A L E R R O R S'

SELECT TYPE 6E RECORDS FROM CMRDETL
   WHERE T6EPGNM   = 'DFHACP  '
      USING CMRDATE CMRTIME T6ETRID T6ETMID T6EOPID T6ECPUR T6ERESP REPORT
END
```

WHERE

Chapter 11. PRL Programming Techniques

This chapter describes additional programming techniques to produce specialized PRL reports. Using these techniques, you can create programs that do the following functions:

- Route report output
- Format report output
- Select archive data
- Expedite record retrieval
- Index detail (CMRDETL) records
- Index by qualifying variable names
- Produce graphs with PRL reports
- Summarize data
- Sort by more than one field
- Report fourth-generation language (4GL) database activity
- Create worst transaction response time reports

Routing Report Output

The output class and format of a user-defined report can be defined with a DD statement in the JCL and the PRL SET REPORTID statement. The output class and format also can be defined with the PRL statements SET CLASS and SET FORM, described in "SET (Assign a Value)" on page 139.

If neither the JCL nor the PRL report allocation is specified, PERFORMANCE REPORTER allocates the report to a default output class of A and a default form of STD. The user-written PRL program (DD statement named ISYPROG) and the JCL output listing (MSGCLASS parameter of JOB statement) are allocated as specified in the MVS JCL, described in "Generating PRL Reports" on page 113.

Defining Output with JCL and PRL SET REPORTID

To define report output with JCL, the ddname of the DD statement must be the same as the value of the SET REPORTID statement or its default (the execution jobname). For example, if the PRL program specified

SET REPORTID = 'TRANAB'

the name of the DD statement defining the report output must be

//TRANAB DD user parameters for report output

Note: The user parameters must follow the rules and conventions for coding a DD statement, as described in the IBM publication, *MVS Extended Architecture JCL Reference Manual*.

If more than one report is created and DD statements are used to define each report output, there must be a corresponding report ID for each named DD allocation. For example:

//TRANAB   DD ......
//TRANSUM DD ......
//TRANDET DD ......

allocates the report as specified in the JCL if

- There is a user-written PRL program that contains a SET REPORTID = 'TRANAB' declaration for the TRANAB allocation.

- There is a user-written PRL program that contains a SET REPORTID = 'TRANSUM' declaration for the TRANSUM allocation.

- There is a user-written PRL program that contains a SET REPORTID = 'TRANDET' declaration for the TRANDET allocation.

If there is a DD allocation for the report in the JCL and SET REPORTID is not specified or the value is not the same as the ddname of the report output DD statement, the JCL DD allocation is ignored. When there is no SET REPORTID declaration in a PRL program, the execution jobname is the default value.

Defining Output with PRL SET CLASS and SET FORM

You can define report output with JCL as described in "Defining Output with JCL and PRL SET REPORTID" on page 149 or you can use the PRL SET CLASS and SET FORM statements. However, if SET CLASS and SET FORM allocate the report output and the JCL contains a named DD statement that matches a SET REPORTID value, the report is allocated as specified by the DD statement. The output defaults to a CLASS of A and a form of STD when there is no user-specified allocation.

Formatting Report Output

A PRL report is formatted according to the parameters specified with the SET and USING statements. SET can be used to size and title the report and to define a variable to be reported. USING specifies the CMRDETL and CMRSTAT records to be reported as reformatted by the BBPLIB data dictionary (see "Data Storage Layout" on page 173). The data dictionary descriptions for each record field are printed as column headings with each specified field name.

Predefined Data Dictionary Descriptions

PERFORMANCE REPORTER provides a data dictionary in a partitioned data set called BBPLIB that automatically creates column headings for the CMRDETL and CMRSTAT record fields specified with the PRL. A description of each CMRDETL and CMRSTAT record field is stored by the PRL processor in the data dictionary. These descriptions are used in the report as column headings.

The USING statement (discussed in "USING (Designate Column Headings and Record Fields)" on page 144) and the field names of a CMRDETL or CMRSTAT record (shown in Appendix B, "CMRDETL: Transaction Detail Records" on page 173) specify the data dictionary headings to be printed.

For example, as shown in the "Time Versus Activity Graph" on page 155:

```
SELECT TYPE 6F RECORDS FROM CMRSTAT
    .
    .
    .
USING CMRDATE CMRTIME T6FTRNCT
REPORT

END
```

selects the CMRSTAT Type 6F record and specifies the data dictionary descriptions for the CMRDATE, CMRTIME, and T6FTRNCT fields, which correspond to the following column headings:

RECORDED DATE

RECORDED TIME

TOTAL TASKS

User-Defined Data

To define data to be reported, assign a value to a variable, and then specify the variable with the USING statement. For example:

```
SELECT TYPE 6E RECORDS FROM CMRDETL
    .
    .
SET TRANTERM = '&T6ETRID.  &T6ETMID'

USING TRANTERM
    .
    .
REPORT

END
```

prints the variable name, TRANTERM, as a column heading, and its assigned value as the column contents. The transaction identifier (&T6ETRID field of the CMRDETL record) and the terminal identifier (&T6ETMID field of the CMRDETL record) are reported in the TRANTERM column.

The variable name must start with an alphabetic character and can comprise any alphanumeric string up to a maximum of eight characters. If the name is longer than the width of the column data, the name is truncated to the column width.

PERFORMANCE REPORTER right-justifies user-defined headings and adds two blank characters at the beginning of the column heading. The column headings can be aligned with the column data either by examining the BBPLIB data dictionary or running the report. The printed report shows where to align the headings. The character string assigned to a column heading variable can then be adjusted to the width of the column data. Or the BBPLIB data dictionary can be examined for the length and type (see "Data Storage Layout" on page 173 for a description of the type key definition) of each CMRDETL or CMRSTAT field, which together determine the column width.

Selecting Archive Data

As described in "Archiving Data (CMRPURG)" on page 11, CMRDETL and CMRSTAT
records can be archived to tape. The SELECT statement does not have to be changed to
distinguish a tape data set from VSAM; the PRL does this automatically. Therefore, change the
CMRDETL or CMRSTAT DD statement to point to a tape data set, as shown in Figure 54.

```
//jobname JOB user parameters              <-- CHANGE AS NEEDED
/*JOBPARM user parameters                  <-- CHANGE AS NEEDED
//CMRL PROC
//PRL     EXEC PGM=CMRPRL
//STEPLIB  DD  DISP=SHR,DSN=CMR.CMRV3.BBLINK     <-- CHANGE AS NEEDED
//SYSPRINT DD  SYSOUT=*
//SYSUDUMP DD  SYSOUT=*
//SYSOUT   DD  SYSOUT=*
//ISYPROG  DD  SYSOUT=*,DCB=(LRECL=80,BLKSIZE=160,RECFM=FBA)
//ISYSOUT  DD  SYSOUT=*,DCB=(LRECL=80,BLKSIZE=160,RECFM=FBA)
//PNLLIB   DD  DISP=SHR,DSN=CMR.CMRV3.BBPLIB     <-- CHANGE AS NEEDED
//CMRDETL  DD  DSN=CMR.MERGED.ARCHIVE,DISP=OLD,UNIT=TAPE,VOL=SER=TP0001
//SORTWK01 DD  UNIT=SYSDA,SPACE=(CYL,5)
//SORTWK02 DD  UNIT=SYSDA,SPACE=(CYL,5)
//SORTWK03 DD  UNIT=SYSDA,SPACE=(CYL,5)
//SYSIN    DD  *
SET TITLE = 'TRANSACTION ANALYSIS FOR ALL TRANSACTIONS'
SET CLASS = 'R'
SELECT TYPE 6E RECORDS FROM CMRDETL
WHERE CMRDATE = '09/17/1999'
SET COUNT = COUNT + 1

USING T6ETRID -
   CMRDATE -
   CMRTIME -
   T6ERESP -
   T6ECPUR -
   T6ETMID -
   T6EOPID
 ORDER BY T6ETRID
 DETAIL
 REPORT
   PRINT COUNT
END
```

Figure 54. DD Statement Change to Point to a Tape Data Set

Expediting Record Retrieval

The data collected in CMRDETL and CMRSTAT is arranged in chronological order with date
and time stamps. A record can be selected and the selection process can start at a specific time
or date by use of STARTING AT with the SELECT statement; for example:

SELECT TYPE 6F RECORDS FROM CMRSTAT STARTING AT 08:00:00 ON 09/30/1999

begins selection of only 6F records collected on 09/30/1999 at 8:00 in the morning.

Note: If records are being selected from an archive tape, STARTING AT has no effect and
should not be used. Records can be selected from an archive tape by using WHERE;
for example:

SELECT TYPE 6F RECORDS FROM CMRSTAT
  WHERE CMRDATE = '09/30/1999'

The archive data set name must be defined in the JCL as shown in "Archiving Data
(CMRPURG)" on page 11.

Indexing Detail (CMRDETL) Records

CMRDETL record file data can be indexed to obtain information from the T6E and T6D records. To report the data in these fields, use a FOR-NEXT statement to set up a counter. Within the FOR-NEXT loop, index the fields by the variable counter, assign the value of the indexed fields to variables, and report each variable using the variable names and column headings.

Note: A CMRDETL data set may contain two forms of T6E records, original and expanded. Be sure to check the expanded record flag (field T6EQUAL) to determine whether a given record is expanded or not. The sample program CMRPRL16, which is distributed in the BBSAMP data set, illustrates how to process both original and expanded format records in the same file.

Table 6 lists the T6E and T6D fields that can be used for indexing.

Table 6. T6E and T6D Fields for Indexing Detail Records

Field Name	Use
T6EQUAL	Format of the file data, as a decimal value of • 127 or less for an original format record • 128 or greater for an expanded format record
T6EFCNT	Number of files per task. The maximum value is 60 for expanded format records and 255 for original format records.
T6EFI	File type, identified by • A (Adabas) • C (CICS) • D (DATACOM/DB) • K (System 2000) • P (MAINVIEW for CICS) • S (SUPRA) • U (User value) • 1 (DL/I) • 2 (DB/2)
T6EFN	File or database name
T6EFT	Elapsed I/O request time
T6EFC	Number of I/O requests to the file
T6ERD	Number of file read or DB2 select requests
T6ERU	Number of file read for update or DB2 open requests
T6EWR	Number of file write or DB2 close requests
T6ERW	Number of file rewrite or DB2 insert requests
T6EDL	Number of file delete or DB2 delete requests
T6EUL	Number of file unlock or DB2 update requests

Table 6. T6E and T6D Fields for Indexing Detail Records (Continued)

Field Name	Use
T6ESB	Number of file start browse or DB2 fetch requests
T6ERN	Number of file read next or DB2 commit requests
T6ERP	Number of file read previous or DB2 other requests
T6EEB	Number of file end browse requests
T6ERB	Number of file reset browse requests
T6EOT	Number of file other requests
T6EV1	First volume serial number associated with the file
T6EV2	Second volume serial number associated with the file
T6EV3	Third volume serial number associated with the file

Indexing by Qualified Variable Name

The parenthetical value used to qualify a variable is appended to the variable name. This qualified name must be used consistently by the TRANS variable within the PRL program, as shown in .

```
SET TITLE = '-*- TOTAL USER TRANSACTION SUMMARY -*-'
SELECT TYPE 6E RECORDS FROM CMRDETL
SET PGMNAM = T6EPGNM(1:4)
SET TRAN  = T6ETRID(1:1)
SET HOUR = CMRTIME(1:2)
WHERE PGMNAM ¬= 'FACT'
    AND TRAN ¬= 'C'
    AND CMRDATE = '09/04/1999'
COMPUTE TRANS(&HOUR) = TRANS(&HOUR) + 1
USING T6ETRID T6ERESP T6EDIST T6EDISTC T6EFCWT T6EFCWTC T6ESUST
ORDER BY T6ETRID
SUMMARY
REPORT
PRINT 'TOTAL TRANSACTIONS PER HOUR'
FOR &X = 00 TO 24
   SET &Y = &X + 01
   PRINT 'FROM' &X ': 00 TO ' &Y ': 00     TOTAL:' &TRANS(&X)
NEXT &X
END
```

Figure 55. Qualified Variable Names PRL Statement Example

Producing Graphs with PRL Reports

The following case studies show how to create PRL graph reports with CMRDETL or CMRSTAT data. The first case study can use any record stored on either data set. The PRL program described in the second study can use 1C records only.

Time Versus Activity Graph

Member	CMRPRL12
Objective	To show graphically the activity over time within a given CICS.
Data	Global Performance Records (Type 6F) from the CMRSTAT file.
Scenario	Every 5 minutes, MAINVIEW for CICS produces a Global Performance Record containing the task count for the 5-minute interval (T6FTRNCT) along with other fields. PRL records these values in chronological order and represents them on a bar chart, as seen in Figure 57 on page 156.

The control statements shown in Figure 56 specify the input data and the format of the report:

```
SET CLASS  = 'R'
 SET REPORTID = 'PRL12'
 SET TITLE  = 'T I M E   V S   A C T I V I T Y'
 SET WIDTH  = '82'
 SET FORM   = 'STD '
 DEFINE GRAPH CHAR 52
 DEFINE T6FTRNCT EDIT ZZZZZ9
 DEFINE NUMSTAR  EDIT 99999999999999
 SET BB = '&vbar SELECT TYPE 6F RECORDS FROM CMRSTAT
     WHERE CMRDATE = '09/17/1999'
 COMPUTE NUMSTAR = T6FTRNCT / 10
 COMPUTE NUMSTAR = NUMSTAR + 1
 IF NUMSTAR > 51 THEN BEGIN
    COMPUTE NUMSTAR = 52
 END;
 SET &GRAPH = BB(1:&NUMSTAR)
 USING CMRDATE  -
    CMRTIME  -
    T6FTRNCT -
    GRAPH
 REPORT
 END
```

Figure 56. Time versus Activity PRL Statements

Note that a variable BB is used to define a string of asterisks (*); the substring feature of the SET statement is used to pick as many asterisks (*) as needed to represent the value. The minimum activity is 15 transactions in the 5-minute period, since MAINVIEW for CICS uses this many transactions to monitor the system. T6FTRNCT was divided by 5 to extract activity for a particular day that was not busy. If the line were all asterisks, this would represent a count in excess of 250 transactions in the 5-minute interval. If your daily transaction rate is 50,000, 100,000, or more, divide by 10, 20, or even 30.
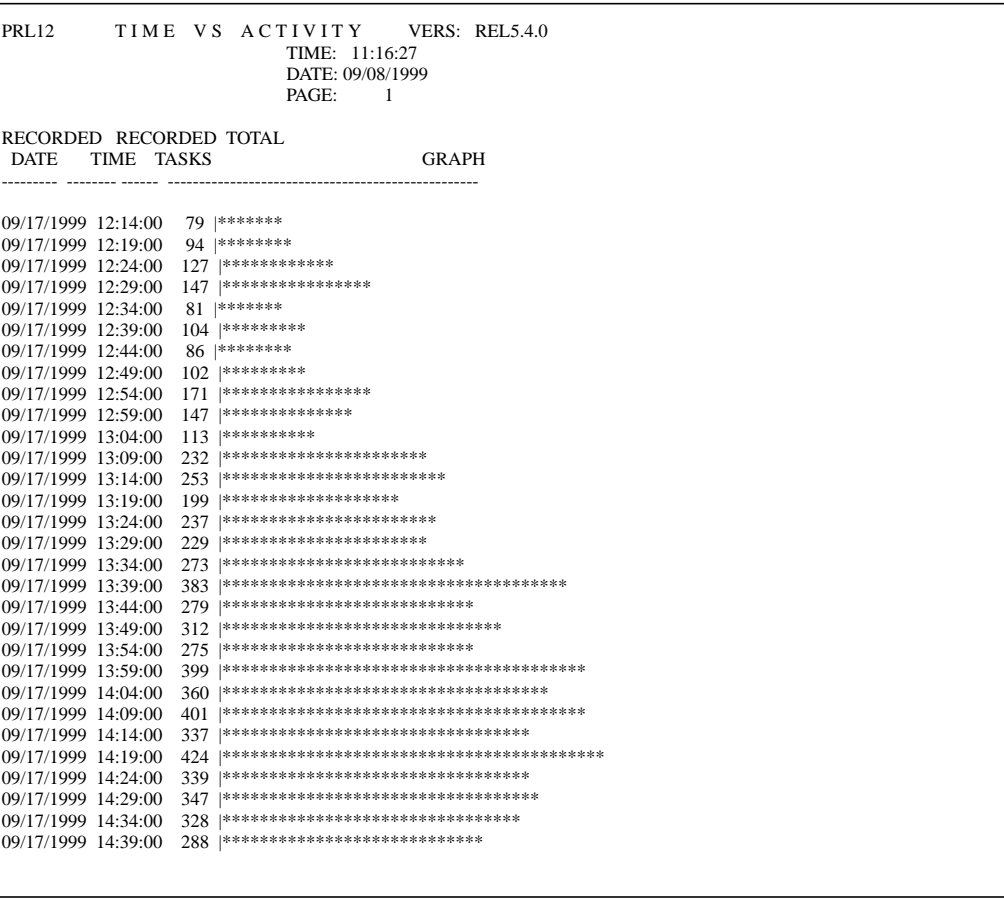
```
PRL12        T I M E   V S   A C T I V I T Y       VERS:  REL5.4.0
                              TIME:   11:16:27
                              DATE:  09/08/1999
                              PAGE:        1

RECORDED   RECORDED  TOTAL
  DATE       TIME    TASKS                        GRAPH
--------- -------- ------ -------------------------------------------------

09/17/1999 12:14:00   79 |*******
09/17/1999 12:19:00   94 |********
09/17/1999 12:24:00  127 |************
09/17/1999 12:29:00  147 |****************
09/17/1999 12:34:00   81 |*******
09/17/1999 12:39:00  104 |*********
09/17/1999 12:44:00   86 |********
09/17/1999 12:49:00  102 |*********
09/17/1999 12:54:00  171 |****************
09/17/1999 12:59:00  147 |***************
09/17/1999 13:04:00  113 |**********
09/17/1999 13:09:00  232 |*********************
09/17/1999 13:14:00  253 |************************
09/17/1999 13:19:00  199 |*******************
09/17/1999 13:24:00  237 |***********************
09/17/1999 13:29:00  229 |*********************
09/17/1999 13:34:00  273 |*************************
09/17/1999 13:39:00  383 |************************************
09/17/1999 13:44:00  279 |**************************
09/17/1999 13:49:00  312 |*****************************
09/17/1999 13:54:00  275 |**************************
09/17/1999 13:59:00  399 |**************************************
09/17/1999 14:04:00  360 |**********************************
09/17/1999 14:09:00  401 |**************************************
09/17/1999 14:14:00  337 |********************************
09/17/1999 14:19:00  424 |*******************************************
09/17/1999 14:24:00  339 |********************************
09/17/1999 14:29:00  347 |**********************************
09/17/1999 14:34:00  328 |*******************************
09/17/1999 14:39:00  288 |***************************
```

Figure 57. Time versus Activity within One Day

A look at the sample output in Figure 57 shows the highs and lows of the day's activity. Use T6FTRMCT instead of T6FTRNCT if you are interested in only terminal activity as opposed to asynchronous tasks; add other 6F fields to the USING statement as needed.

Adding a particular time of day in a WHERE clause, like this

```
SELECT TYPE 6F RECORDS FROM CMRSTAT
 SET TIME =  CMRTIME(1:2)
WHERE TIME = '12'
```

permits you to chart, on a single page, information about peak periods, such as 12 noon to 12:59 pm, over several months (see Figure 58 on page 157).

```
PRL12        T I M E   V S   A C T I V I T Y       VERS:  REL5.4.0
                                    TIME:   11:05:36
                                    DATE: 09/28/1999
                                    PAGE:       1

 RECORDED   TOTAL
   DATE    TASKS                        GRAPH
 --------  ------  -------------------------------------------------

09/03/1999  102  |*********
09/04/1999  171  |****************
09/05/1999  147  |**************
09/09/1999  113  |**********
09/07/1999  232  |**********************
09/10/1999  253  |***********************
10/09/1999  199  |*******************
10/09/1999  237  |***********************
10/13/1999  229  |***********************
10/14/1999  273  |**************************
10/17/1999  383  |**************************
10/18/1999  279  |*************************************
10/19/1999  312  |***************************
10/20/1999  275  |*****************************
10/21/1999  399  |***************************
10/24/1999  360  |**************************************
10/25/1999  409  |**************************************
10/26/1999  337  |***************************************
10/27/1999  424  |*********************************
10/28/1999  339  |*********************************************
11/02/1999  328  |***********************************
11/03/1999  288  |********************************
11/04/1999  254  |****************************
11/05/1999  278  |********************************
```

Figure 58. Time versus Activity over Several Months

Service Level Analysis Graph

Member	CMRPRL7
Objective	To graphically represent service levels as defined by CMRSOPT and collected by MAINVIEW for CICS.
Data	Service Level Analysis records (Type 1C) from the CMRSTAT file. Each record contains 18 service level counts.
Scenario	MAINVIEW for CICS produces service level records every hour, on the hour. There are 17 default service levels defined in CMRSOPT, ranging from half a second to 90 seconds. In addition, an extra service level is kept, recording response times greater than 90 seconds. The ranges of values in the various service levels can be changed through the customization macro CMRSOPT. A different recording frequency can be specified on the Service Level Analysis field of the PERFORMANCE REPORTER Statistics File Recording Frequencies screen. Note that the transaction counts only involve transactions that run at terminals and are, therefore, not biased by fast asynchronous transactions. The control statements shown in Figure 59 on page 159 show how service levels can be represented. The example in Figure 59 is not intended to cover instances where there has been no activity whatsoever. Thus, the WHERE clause presumes that this is an idle timeframe when there has been no activity in the first three LTX values. If this is an incorrect assumption for your site, repeat the OR clause with LTX004, LTX005, and so on as far as is necessary. The LTX fields in the FOR loop in the above example are represented by as many asterisks (*) as needed by substringing field BB. If there are more than 50 asterisks (*), the plus (+) is added. If you have a lot of asterisks (*) in your report, increase the frequency of 1C records on the file by reducing the interval between records through transaction FSET or by dividing the transaction count by a scaling factor. Each line containing the LTX values and their graphical representation is then printed. Ideally, the chart shows a high percentage of transactions appearing in the first service level, with the frequency rapidly diminishing as the higher service level buckets are reached. Any activity above the ninth or tenth service level slot, with a response time of seven seconds or more, is cause for concern. At this point, the time and date from the 6E records can be noted for a detailed analysis.

```
SET CLASS  = 'R'
SET REPORTID = 'PRL7'
SET TITLE  = 'S E R V I C E   L E V E L   A N A L Y S I S'
SET WIDTH  = '86'
SET LINES  = '43'
DEFINE NUMTRAN EDIT Z,ZZZ,ZZ9
DEFINE NUMSTAR EDIT 99999999999999
SET BB = '|***********************************************+'
SET GRAPHS  = '|....5....10..15...20...25...30...35...40...45...50'
SET GRAPH = '          '
READ:
SELECT TYPE 1C RECORDS FROM CMRSTAT
    WHERE CMRDATE = '09/17/1999'
      AND LTX001 >  0
       OR LTX002 >  0
       OR LTX003 >  0
 USING CMRDATE -
     CMRTIME
 PRINT ' '
 PRINT CMRDATE CMRTIME '    ' GRAPHS
 PRINT '  RESPONSE    COUNT  |      (SCALE = 1 : 5 (ROUNDED))'
 FOR &IX = 001 TO 018
   COMPUTE NUMSTAR = LTX(&IX) / 5
   COMPUTE NUMSTAR = NUMSTAR  + 1
   IF LTIM(&IX) = 0 THEN SET LTIM(&IX) = '    100.000'
   IF NUMSTAR > 51 THEN BEGIN
     COMPUTE NUMSTAR = 52
   END;
   SET STARS =  BB(1:&NUMSTAR)
   COMPUTE NUMTRAN = LTX(&IX)
   PRINT LTIM(&IX) NUMTRAN STARS
 NEXT &IX
GOTO READ
REPORT
END
```

Figure 59. Service Level Analysis PRL Statements

As shown in the report in Figure 60 on page 160, the CMRDATE and CMRTIME field contents are reported when the REPORT statement is processed. The headings, RESPONSE, COUNT, and the scale are printed when the PRINT statement is processed. Enclosing a character string in single quotation marks defines the characters to be printed. To print the value of the variable, specify a defined variable, not enclosed in single quotation marks, with PRINT.

Note: To use the PRINT statement, as in this example, the number of data lines per page must be defined, for example, SET LINES=21, and the reporting of data within those lines must be controlled, for example, FOR &IX = 001 TO 018. SET LINES determines each page break and generates a new page with titles and column headings.

```
PRL7    S E R V I C E   L E V E L   A N A L Y S I S  VERS:  REL5.4.0
                              TIME:   12:10:56
                              DATE: 09/17/1999
                              PAGE:       1

 RECORDED RECORDED
  DATE    TIME
 -------- -------


09/17/1999 15:59:00    |....5....10...15...20...25...30...35...40...45...50
   RESPONSE    COUNT  |     (SCALE = 1 : 5 (ROUNDED))
     0.500   4,687  |**************************************************+
     1.000    281  |**************************************************+
     1.500    153  |******************************
     2.000    123  |*************************
     2.500     36  |*******
     3.000      5  |*
     4.000      2  |
     5.000      2  |
     6.000      2  |
     7.000      4  |*
     8.000      2  |
     9.000      2  |*
    10.000      3  |**
    20.000     12  |
    30.000      0  |
    60.000      0  |
    90.000      0  |
 34359.738      0  |
```

Figure 60. Service Level Analysis Output

Summarizing Data

Each selected record is reported on one line, which can cause the report to become quite large. Use the PRL statement SUMMARY to report all of the records on just two lines whenever there is a control-break in the report, as shown in Figure 61 and in Figure 62 on page 162. A control-break is the point in a report when the first variable specified with USING changes. For this reason, it is best to always make the first USING variable the same as the ORDER BY variable.

```
SET CLASS = 'R'
SET REPORTID = 'REPORT1'
SET TITLE = 'TRANSACTION ANALYSIS FOR ALL TRANSACTIONS'
SELECT TYPE 6E RECORDS FROM CMRDETL
  USING T6ETRID -
      T6ERESP -
      T6ECPUR -
      T6EFCWT -
      T6ESHWM -
      T6EPAGCT
  ORDER BY T6ETRID
  SUMMARY
  REPORT
END
```

Figure 61. SUMMARY PRL Statement

The PRL for this report is in the CMRPRL3 member of the sample library (BBSAMP). As shown in Figure 62, the first of the two summary lines contains totals for all numeric fields. The second line contains the computed averages. The totals and averages are shown whenever there is a change in the first reported variable. These two lines of totals and averages also are shown when the PRL statement DETAIL is used. One selected record is reported per line, and when the first variable changes, the totals and averages are reported as SUMMARY.

Note: Character data only can be included in a summary report if it is specified as the first USING variable.

```
REPORT01                  TRANSACTION ANALYSIS FOR ALL TRANSACTIONS          VERS: REL5.4.0
                                        TIME:   17:03:11
                                        DATE: 09/17/1999
                                        PAGE:      1

TRAN           RESPONSE   CPU REAL  FILE_CONTROL    STORAGE        TOTAL
NAME   TOTAL     TIME       TIME    I/O TIME  HI_WATER_MARK   PAGE_COUNT
--------------- ------------ ------------ ------------ --------------- ----------------

CSGM    52     29.530     0.264     0.000      354984        58
   AVG *****     0.568     0.005     0.000        6827         1

CSMT     6      4.380     0.062     0.000       72952        13
   AVG *****     0.730     0.010     0.000       12159         2

CSPG    13      0.418     0.022     0.000      102048        18
   AVG *****     0.032     0.002     0.000        7850         1

CSSF    33     24.234     0.496     0.000      321368       137
   AVG *****     0.734     0.015     0.000        9738         4

CSSN     4      2.339     0.021     0.000       31776         7
   AVG *****     0.585     0.005     0.000        7944         2

CSST     5      0.206     0.017     0.000       39432         0
   AVG *****     0.041     0.003     0.000        7886         0

DB2     16      9.879     0.224     0.000       99040         1
   AVG *****     0.617     0.014     0.000        6190         0

DISP     3      7.617     0.756     0.000       39328        37
   AVG *****     2.539     0.252     0.000       13109        12

FCD2     6      5.147     0.088     0.000       88624         8
   AVG *****     0.858     0.015     0.000       14771         1

FIC2  28922   6788.137   132.645  2275.220   305450768     14799
   AVG *****     0.235     0.005     0.079       10561         1

FST2     4      2.539     0.014     0.000       54400        28
   AVG *****     0.635     0.003     0.000       13600         7

HST2    72     15.729     1.789     8.092     1259048        23
   AVG *****     0.218     0.025     0.112       17487         0

JNL2    56   156338.884  13.032     0.000      409264       397
   AVG *****  2791.766     0.233     0.000        7308         7

JPH1   929  10020.464     4.830     0.000    599785928        5
   AVG *****    10.786     0.005     0.000      645625         0

SMN2    62     19.769     0.308     0.000      436824        33
   AVG *****     0.319     0.005     0.000        7046         1

STAR  5360    308.284    10.726     0.000    32212464         2
   AVG *****     0.058     0.002     0.000        6010         0

TSM2    30    964.988     0.327     0.000      911808        17
   AVG *****    32.166     0.011     0.000       30394         1

TSM4    16     72.636     0.235     0.000      483792        14
   AVG *****     4.540     0.015     0.000       30237         1

TSM5    15    160.559     0.262     0.000      455016         3
   AVG *****    10.704     0.017     0.000       30334         0
```

Figure 62. Transaction Analysis for All Transactions Summary Report

Sorting by More than One Field

To sort by more than one field and report these fields:

- Set a variable to more than one field

- Specify the variable name with USING and ORDER BY

An example is shown in Figure 63.

```
**************************************************************
*                                                            *
* This report selects transaction records and then places    *
* them into one of ten response ranges.  These ranges are    *
* then summarized to show resource usage for a given         *
* transaction and response range.                           *
*                                                            *
**************************************************************
SET CLASS = 'R'
SET REPORTID = 'REPORT1'
SET TITLE = 'TRANSACTION RESPONSE ANALYSIS BY RESPONSE RANGE'
SELECT TYPE 6E RECORDS FROM CMRDETL
SET &VAR2 = '9> '
IF &T6ERESP < 9 THEN SET &VAR2 = '8-9'
IF &T6ERESP < 8 THEN SET &VAR2 = '7-8'
IF &T6ERESP < 7 THEN SET &VAR2 = '6-7'
IF &T6ERESP < 6 THEN SET &VAR2 = '5-6'
IF &T6ERESP < 5 THEN SET &VAR2 = '4-5'
IF &T6ERESP < 4 THEN SET &VAR2 = '3-4'
IF &T6ERESP < 3 THEN SET &VAR2 = '2-3'
IF &T6ERESP < 2 THEN SET &VAR2 = '1-2'
IF &T6ERESP < 1 THEN SET &VAR2 = '0-1'
SET &VAR3 = T6ETRID
SET ID-RANGE = '&VAR3. &VAR2. '
 USING ID-RANGE -
    T6ERESP -
    T6ECPUR -
    T6EDIST -
    T6EFCWT -
    T6ESUST -
    T6ETSWT -
    T6EPCWT
 ORDER BY ID-RANGE
 SUMMARY
 REPORT
END
```

Figure 63. Set Variables to Sort by More than One Field PRL Statement

This technique is used in the case study described in "Creating Longest Transaction Response Time Reports" on page 165.

Reporting 4GL Database Activity

To retrieve and process the fourth-generation language (4GL) database activity collected in the CMRDETL and CMRSTAT data sets, use PRL and JCL DD statements to specify the input for your reports. The databases and 4GLs are identified by the following field names used in PRL statements:

T6EPGNM   The program name of any 4GL or database (except MANTIS, which is identified through T6EMNTIS) represented by T6EPTYPE.

T6EPTYPE   The program name type identified by a 1-character database or 4GL designation.

T6EFI   The file type identified by a 1-character file or database name represented by T6EFN.

T6EFN   The file or database name.

For example, the statements shown in Figure 64, submitted as an MVS batch job, report on NATURAL performance on a given day.

```
SET TITLE = 'NATURAL RESPONSE TIMES'
 SET TITLE1 = 'On 09/17/1999'

  SELECT TYPE 6E RECORDS FROM CMRDETL
     WHERE CMRDATE = '09/17/1999'
     AND T6EPTYPE = 'N'

 USING CMRTIME  -
     T6EPGNM  -
     T6EUSER  -
     T6ERESP  -
     T6EFCNT

  REPORT

  END
```

Figure 64. NATURAL Performance PRL Statements

Creating Longest Transaction Response Time Reports

Detailed transaction information stored on the CMRDETL data set can be used to create daily reports. Sample member CMRPRL14 of your BBSAMP data set creates a report from 6E detail transaction records. This report shows the 30 longest transactions recorded over a daily interval.

Figure 65 shows sample PRL statements from member CMRPRL14 to create a report of the transactions with the longest response time. In this example, the control statements restrict the report to terminal transactions that occurred on a single day.

```
SET CLASS = 'R'
 SET REPORTID = 'PRL14'
 SET TITLE = 'WORST RESPONSE TIMES'
 SET TITLE1 = 'RESTRICTED TO 09/18/1999 '
 SET TITLE2 = 'TERMINAL ATTACHED TRANSACTIONS ONLY'
 SELECT TYPE 6E RECORDS FROM CMRDETL
      WHERE CMRDATE = '09/18/1999'
       AND T6ETMID ¬= '   '
  COMPUTE LINE_I/O = T6ECHARI + T6ECHARO
  USING CMRTIME  -
      T6ETRID  -
      T6EPGNM  -
      T6ERESP  -
      T6ECPUR  -
      T6ETMID  -
      T6EOPID  -
      T6EFCWT  -
      T6EFCCAL -
      LINE_I/O
 ORDER BY T6ERESP IN DESCENDING SEQUENCE
  SET COUNT = COUNT + 1
  IF COUNT > 30 THEN GOTO DDD
 REPORT
 DDD:
 PRINT '  * * * * * * * * * * * * * * * * *'
 PRINT '  *                             *'
 PRINT '  * W O R S T  3 0  R E S P O N S E S    *'
 PRINT '  *                             *'
 PRINT '  * * * * * * * * * * * * * * * * *'
 END
```

Figure 65. Longest Transaction Response Time PRL Statements

Figure 66 on page 166 shows the left-most portion of an example report created by these PRL control statements. This report lists 30 transactions with the longest response times over a daily period.

```
PRL14                WORST RESPONSE TIMES           VERS:  REL5.4.0
                RESTRICTED TO 09/18/1999        TIME:  14:38:01
                TERMINAL ATTACHED TRANSACTIONS ONLY      DATE: 09/19/1999
                            PAGE:       1

RECORDED  TRAN  PROGRAM    RESPONSE    CPU REAL  TERM  OPR  FILE CONTROL
 TIME    NAME   NAME        TIME       TIME  ID. ID.    I/O TIME
 ----    ----   ----        ----       ---- --- ---    --- ----

10:22:23 DGNH  LDG0000      33.515     0.629 SC32 DJD      0.377
16:55:30 PCXR  PCXRDRVR     20.658      0.028 L072 RGN      0.000
13:10:21 DRVA  ADRIVER      16.632     0.156 L072 RGN      0.000
16:55:42 GRSD  GRS2500      16.577     0.387 SB24          0.000
16:55:58 PCXR  PCXRDRVR     13.263      0.027 L072 RGN      0.000
17:14:10 GRSD  GRS2500      11.990     0.384 SB24          0.000
10:22:45 DGNH  SYSEDIR       8.708      0.398 SC32 DJD      2.095
17:08:02 GRSD  GRS2500       8.537     0.388 SB24          0.000
12:03:52 FSET  CMRMAP        8.370     0.078 SB24          0.000
17:06:45 GRSD  GRS2500       7.713     0.405 SB24          0.000
15:58:43 DGNH  SYSEDIT       7.201      0.087 SC32 DJD      4.279
17:02:34 GRSD  DFB20001      6.490     0.020 SC26          0.000
15:58:35 GRSD  GRS2500       6.402     0.418 SB24          0.000
11:28:59 CSPK  DFHPRK        5.696     0.113 L064          0.068
16:13:18 GRSD  GRS2500       5.368     0.418 SB24          0.000
13:27:07 CEMT  DFHEMTP       4.620      0.953 L072 RGN      0.000
12:02:53 CSGM  DFHGMM        4.612     0.017 SB24          0.000
16:52:40 PCXR  PCXRDRVR      4.494      0.026 L072 RGN      0.000
16:10:26 GRSD  GRS2500       4.418     0.384 SB24          0.000
10:22:08 PCXR  PCXRDRVR      4.270     0.022 L064          0.000
17:14:06 PCXR  PCXRDRVR      4.253      0.025 L072 RGN      0.000
16:04:32 GRSD  GRS2500       4.151     0.385 SB24          0.000
15:58:41 GRSD  GRS2500       4.034     0.386 SB24          0.000
16:42:13 GRSD  GRS2500       3.984     0.436 SB24          0.000
15:28:49 DGNH  LDG0000       3.949     0.098 SC32 DJD      3.823
17:12:50 PCXR  PCXRDRVR      3.907      0.035 L072 RGN      0.248
16:04:31 PCXR  PCXRDRVR      3.615      0.021 L072 RGN      0.000
16:13:05 FRED  GRS2500       3.570     0.380 SB24          0.000
13:28:47 CEMT  DFHEMTP       3.561      0.929 L072 RGN      0.000
13:31:58 GRSD  GRS2500       3.559     0.390 SB24          0.000
    * * * * * * * * * * * * * * * *
    *                     *
    * W O R S T   3 0   R E S P O N S E S     *
    *                     *
    * * * * * * * * * * * * * * * * *
```

Figure 66. Longest Transaction Response Times Report

Transactions are sorted in descending order by response time. The longest transaction is at the
top of the report.

Part 5. Appendixes, Glossary, Index

This part contains appendixes that describe

- BBSAMP data set members
- MAINVIEW for CICS data record formats

This part also contains a glossary of terms that are used in MAINVIEW technology and an index of the information presented in this book.

Appendix A. BBSAMP Data Set Members

The BBSAMP data set contains sample members of batch JCL, user exit routines, and control statements to produce MAINVIEW for CICS reports. Table 7 lists the members and gives a functional description of each member.

Table 7. BBSAMP Data Set Members for PERFORMANCE REPORTER

BBSAMP Member Name	Description
BAC0762x	Various USERMODs to suppress the recording of CICS Monitoring Program (CMP) data to CICS journals. Each USERMOD is for a specific CICS release.
CMRADAX	Sample exit for Adabas Version 5 to capture MAINVIEW for CICS data after a database call.
CMRADBX	Sample exit for Adabas Version 5 to capture data before a database call.
CMRBARC	Sample JCL to copy a trace log data set to a sequential data set for archival.
CMRBRLOD	Sample JCL to reload an archived copy of a trace to a new trace log data set for online viewing.
CMRCHRT	Sample batch report JCL and control statements.
CMRCOBCP	Sample VS/COBOL II copybook containing CMRDETL record definitions for CMRFRED program communication.
CMRCOBnn	VS/COBOL II batch program samples for generating CICS performance statistics reports.
CMRCOBJ1 CMRCOBJ2	Sample JCL to compile and execute VS/COBOL II programs.
CMRCSAR	Sample PRL to produce the Common System Area short-term report.
CMRCSOR	(Obsolete) Sample PRL control statements that use CMRSTATC output to produce the Transaction Class Usage report.
CMRDCTRD CMRDCTRS	(Obsolete) Sample PRL control statements that use CMRSTATC output to produce detail and summary reports about the Destination Control Table.
CMRDDTL	Sample JCL to delete and define CMRDETL VSAM data sets.
CMRDFSUM	Sample JCL to delete and define the VSAM data sets holding summarized records created by the CMRSUMD utility.
CMRDJCL	Sample JCL to archive data from the CMRDETL data set.
CMRDLDF	Sample JCL to delete and define CMRDETL VSAM files and load the initial record into CMRDETL.
CMRDPARM	Sample CMRPURG parameters to archive or purge data sets.
CMRFCTRD CMRFCTRS	(Obsolete) Sample PRL control statements that use CMRSTATC output to produce the File Control Table summary and detail reports.
CMRFRED	Sample program to reformat CMRDETL data into COBOL-readable format.

Record Field Names

Table 7. BBSAMP Data Set Members for PERFORMANCE REPORTER (Continued)

BBSAMP Member Name	Description
CMRJCTRD CMRJCTRS	(Obsolete) Sample PRL control statements that use CMRSTATC output to produce the Journal Control Table short-term report.
CMRJCTXn	Sample JCT user journal definitions for various CICS releases.
CMRL	Sample JCL to execute PRL programs.
CMRMCTXn	Sample Monitor Control Table entries required to record DL/I performance statistics for various releases of CICS.
CMRPCTR	(Obsolete) Sample PRL control statements that use CMRSTATC output to produce the Program Control Table short-term report.
CMRPPTR	(Obsolete) Sample PRL control statements that use CMRSTATC output to produce the Processing Program Table short-term report.
CMRPRBT	Macro to generate the problem threshold definitions table. Refer to member CMRUPRBT for its use.
CMRPRLn	Various examples of Performance Reporting Language (PRL) control statements to generate reports.
CMRPURGE	Sample JCL to purge and merge recorder file data.
CMRRACF	CLIST that provides an interactive dialog to build SAF resource definitions.
CMRRAP	Sample JCL to generate the Resource Analysis Report.
CMRRAPM	Macro used to define the resource analysis table used by CMRRAPR and CMRCHRT.
CMRSASxx	Various SAS programs to read CMRDETL data and create reports.
CMRSITR	Sample PRL statements to generate a SIT report.
CMRSOPT	Macro that specifies monitored resources, collection intervals, and response time service levels.
CMRCSTATC	(Obsolete) Sample JCL to run the CMRSTATC conversion routine for CICS statistical records.
CMRSTATX	Sample JCL to process CICS 110 records stored on the SMF data set prior to their use by the CICS statistics program, DFHSTUP, and other products that use 110 records.
CMRCSTJCL	Sample JCL to run the CMRSTATS conversion routine for CICS statistical records.
CMRSUMD	Sample program to create four workloads of daily summary records.
CMRSUMDx	Sample CMRSUMD control statements to create summary records for various intervals.
CMRS2AX	Sample exit for SYS2K Version 12.0 to capture activity after a database call.
CMRS2BX	Sample exit for SYS2K Version 12.0 to capture activity before a database call.
CMRTCTRD CMRTCTRS	(Obsolete) Sample PRL control statements that use CMRSTATC output to produce Analysis of Terminal Control Table summary and detail reports.
CMRTCTR	Sample PRL control statements to produce the Terminal Control Table short-term report.

Table 7. BBSAMP Data Set Members for PERFORMANCE REPORTER (Continued)

BBSAMP Member Name	Description
CMRTSTRD CMRTSTRS	(Obsolete) Sample PRL control statements that use CMRSTATC output to produce the Temporary Storage Table short-term report.
CMRUACMP	Sample user exit to call the CMRCUEX program.
CMRUAPLT	Sample PLT program to start CMRUACMP.
CMRUPRBT	Sample to define the problem threshold table.
CMRURAPM	Sample to define the resource analysis table.
CMRUSOPT	Sample macro options that define the options table.
CMRUSRSD	Sample exit called by CMRSUMD summarization utility to give control to a user-written routine when a CMRDETL record is processed.
CMRUSR01	Sample of a user exit to switch CMRDETL data sets when one becomes full and needs to be archived.
DCCTXPR	Sample exit to the DATACOM DCCTXPR routine.
FACTRECM	Sample assembler DSECTs.
GENEROL	Sample user exit for inclusion in the GENER/OL user task program.
LPCZZMON	Sample modification of the MSA LPCZZMON exit.
RDOCMRxx	Samples that define all required programs and transactions to CICS.
SAPCMROT	A sample program to capture SAP data in the T6E record of CMRDETL. SAPCMROT captures SAP data by calls to the exit, CMRCUEX, which is described in the *MAINVIEW for CICS Customization Guide*. SAPCMROT must be included in the SAP statistics exit (SAPSTEC) to pass data to MAINVIEW for CICS through a call to CMRCUEX.
SAPCMROW	Sample of the SAPSTEC exit called by the SAP system to pass data to MAINVIEW for CICS through a call to CMRCUEX.
SASINxx	(Obsolete) SAS control statements to process statistical and transaction records.
SASINXxx	SAS control statements to process statistical and transaction records.

Record Field Names

Appendix B. CMRDETL: Transaction Detail Records

PERFORMANCE REPORTER constructs reports from the transaction data that MAINVIEW for CICS collects from CICS regions. Transaction data statistics are stored as transaction detail records in the CMRDETL data set. PERFORMANCE REPORTER uses BBPLIB member CMRDETL as a data dictionary to reformat these records for PRL reports.

This appendix describes the format of CMRDETL transaction detail records, which have a record type of 6D or 6E. A Type 6E record is written to the CMRDETL data set for every successful transaction. If a task abends, a Type 6D record is written instead. A Type 6D record has the same format as a Type 6E record.

Data Storage Layout

Table 8 describes the storage of CICS transaction data by MAINVIEW for CICS for PRL, COBOL, and SAS reports. The type keys in the table represent

- Type of data stored on the CMRDETL data set

  The tables in this appendix identify the type of data stored in a record field by these keys.

- Data type key specified in the CMRDETL member of the BBPLIB data dictionary

  PERFORMANCE REPORTER uses this key to identify the user-selected fields from the collected records.

Table 8. CMRDETL Data Storage Layout

Type	Recorded Data Format	Description	Type	Data Dictionary Format
C		Character	C	
X	*mmddyyyy*	Date	D	*mm/dd/yyyy*
P	*hhmmsst*	Time	T	*hh:mm:ss*
X		Hexadecimal	X	
B		Binary	B	
B		Clock (recorded in binary, converted to decimal, then divided by 62,500 for *ss.sss*)	K	*ss.sss*
P		Packed	P	

where the following variables represent numeric values:

mm = month (in a Date field)
dd = day
yyyy = year
hh = hours
mm = minutes (in a Time field)
ss = seconds
t = tenths of a second

Record Header Information

Each CMRDETL transaction detail record has a header area that identifies the data source, the type of record, and when it was collected. Table 9 shows the layout of this header area. The header fields can be referenced by their names.

Table 9. CMRDETL Record Header Fields

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
00 (00)	CMR$SYS	08 - C	CICS System ID
08 (08)	CMRDATE	04 - X	Date of data creation. This value is also the task detach date. The date is recorded in the form YYYYMMDD.
0C (12)	CMRTIME	04 - P	Time of data creation. This value is also the task detach time. Time is recorded as HHMMSS using a 24-hour clock.
10 (16)	CMRCLOCK	08 - X	Time of data creation in hexadecimal format.
18 (24)	CMRRECID	03 - P	Three-byte packed record ID assigned by MAINVIEW for CICS. This value is the CICS task number assigned to the transaction.
1B (27)	TYPE	01 - X	Record Identifier

Record Format

The tables in this section show the format of a Type 6D or 6E transaction detail record. lists the fields of a Type 6D or 6E record in ascending offset order. lists the fields of the record by function (such as task or terminal).

Note: To compute the actual value for a 4-byte time field, such as T6ERESP, convert the binary value to decimal and divide by 62,500. The resulting time is in ss.sss second format.

CMRDETL Record Fields by Offset

Table 10 lists the fields of a Type 6D or 6E transaction detail record. The fields are listed in ascending offset order. The name of a field, its length, and a description of its contents are listed on each line of the table.

Table 10. Type 6D or 6E Transaction Detail Record Fields by Offset

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	T6ETRID	04 - C	Transaction ID
20 (32)	T6EPGNM	08 - C	Program Name (see T6EPTYPE)
28 (40)	T6ETMID	04 - C	Terminal ID
2C (44)	T6EOPID	03 - C	Operator ID
2F (47)	T6ECPRID	01 - C	Compression ID
30 (48)	T6ECMPBM	12 - X	Record Compress Field Bit Map
3C (60)	T6ERESP	04 - B	Response Time Total
Note:	T6ERESP is an unsigned 32-bit binary field rather than a signed 31-bit binary field. If there is the possibility that a lengthy transaction will exceed 9.5 hours, T6ERESP must be transformed into a doubleword binary field before converting it to decimal. If any transaction exceeds 19 hours, the T6ERESP field overflows and no longer contains a valid response time.		
40 (64)	T6EDISTT	04 - B	Dispatch (CPU) Clock Time
44 (68)	T6EDISTC	02 - B	Dispatch (CPU) Clock Time Count
46 (70)	T6EDIOTT	04 - B	DL/I I/O Time
4A (74)	T6EDIOTC	02 - B	DL/I I/O Time Count
4C (76)	T6EFCWTT	04 - B	File Control I/O Time
50 (80)	T6EFCWTC	02 - B	File Control I/O Time Count
52 (82)	T6ESUSTT	04 - B	Suspend Time
56 (86)	T6ESUSTC	02 - B	Suspend Count
58 (88)	T6ETCWTT	04 - B	Terminal Control Time
5C (92)	T6ETCWTC	02 - B	Terminal Control Count
5E (94)	T6ETSWTT	04 - B	Temporary Storage Time
62 (98)	T6ETSWTC	02 - B	Temporary Storage Count
64 (100)	T6EJCWTT	04 - B	Journal Control Time
68 (104)	T6EJCWTC	02 - B	Journal Control Count
6A (106)	T6EECWWT	04 - B	User ECB Wait Time
6E (110)	T6EECWTC	02 - B	User ECB Wait Count

Table 10. Type 6D or 6E Transaction Detail Record Fields by Offset (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
70 (112)	T6ETDWWT	04 - B	Transient Data Wait Time
74 (116)	T6ETDWTC	02 - B	Transient Data Wait Count
76 (118)	T6EPCWWT	04 - B	DFHRPL Wait Time
7A (122)	T6EPCWTC	02 - B	DFHRPL Wait Count
7C (124)	T6ETSWK	04 - B	Temporary Storage String Wait Time
80 (128)	T6ETSWC	02 - B	Temporary Storage String Wait Count
82 (130)	T6EVSTWT	04 - B	File Control String Wait Time
86 (134)	T6EVSTWC	02 - B	File Control String Wait Count
88 (136)	T6EFCCAL	04 - B	File Control Call Count
8C (140)	T6EDLIC	04 - B	DL/I Call Count
90 (144)	T6EPAGCT	04 - B	Unused - Obsolete
94 (148)	T6ESHWM	04 - B	Storage High-Water Mark
98 (152)	T6EUSER	08 - C	CICS User ID
A0 (160)	T6EMSGI	04 - B	Messages from the Terminal to CICS
A4 (164)	T6EMSGO	04 - B	Messages from a Program to the Terminal
A8 (168)	T6ECHARI	04 - B	Number of Bytes in Messages from the Terminal to CICS
AC (172)	T6ECHARO	04 - B	Number of Bytes in Messages from a Program to the Terminal
B0 (176)	T6EABCD	08 - C	Multiple Abend Codes
B8 (184)	T6EDSPQ	04 - B	First Dispatch Queue Time Only
Note: Storage occupancy overlay field			
BC (188)	T6EUSTGO	08 - X	Storage Occupancy (8 byte, IBM default)
BC (188)	T6EUSTG1	02 - B	Unused - Filler
BE (190)	T6EUSTGS	04 - B	Storage Occupancy (4 byte, preferred)
C2 (194)	T6EUSTG2	02 - B	Unused - Filler
Note: End of storage occupancy overlay field			
C4 (196)	T6ENETNM	08 - C	Network ID of Terminal
CC (204)	T6EDBRQT	04 - B	Non-DL/I Database Request Time
D0 (208)	T6EDBRQC	02 - B	Non-DL/I Database Request Count
D2 (210)	T6EUDATA	18 - C	User data

Table 10. Type 6D or 6E Transaction Detail Record Fields by Offset (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
E4 (228)	T6EPTYPE	01 - C	Program Name Type A = SAP C = CSP D = DMS G = GENER/OL I = IDEAL L = Millennium M = Mantis N = Natural S = PCS U = UFO blank = CICS program name
E5 (229)	T6ETRTY	01 - C	Transaction Subtype: A ATI-attached C Conversational task D Transient data trigger-attached F FEPI S System-internal task T Terminal-attached Z Pseudo-conversational
E6 (230)	T6ETASK	04 - B	Count of Tasks in Summary
EA (234)	T6ECPUR	04 - X	CPU Real time
EE (238)	T6EFCGC	04 - B	File GET Count (Total for Task)
F2 (242)	T6EFCPC	04 - B	File PUT Count (Total for Task)
F6 (246)	T6EFCBC	04 - B	File BROWSE Count (Total for Task)
FA (250)	T6EFCAC	04 - B	File ADD Count (Total for Task)
FE (254)	T6EFCDC	04 - B	File DELETE Count (Total for Task)
102 (258)	T6EFCOC	04 - B	Other File Call Count (Total for Task)
106 (262)	T6ETDGC	04 - B	Transient Data GET Count
10A (266)	T6ETDPC	04 - B	Transient Data PUT Count
10E (270)	T6ETDRC	04 - B	Transient Data PURGE Count
112 (274)	T6ETSGC	04 - B	Temporary Storage GET Count
116 (278)	T6ETSPAC	04 - B	Auxiliary Temporary Storage PUT Count
11A (282)	T6ETSPMC	04 - B	Temporary Storage PUT Main Count
11E (286)	T6ESCUC	04 - B	Storage Control User GET Count
122 (290)	T6EPCLIC	04 - B	Program Control Link Count
126 (294)	T6EPCXC	04 - B	Program Control Transfer Control Count
12A (298)	T6EPCLOC	04 - B	Program Control Load Count
12E (302)	T6EJCC	04 - B	Journal Control PUT/WRITE Count
132 (306)	T6EICC	04 - B	Interval Control PUT/INITIATE Count

Table 10. Type 6D or 6E Transaction Detail Record Fields by Offset (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
136 (310)	T6ESPPC	04 - B	Sync Point Count
Note: MANTIS and SAP overlay the same record storage			
13A (314)	T6EMNTIS	33 - C	MANTIS Program Name
13A (314)	T6ESAPLT	04 - C	SAP Transaction ID
13E (318)	T6ESAPTY	01 - C	SAP Task Type
13F (319)	T6ESAPMN	02 - C	SAP Authorization Code
141 (321)	T6ESAPAC	12 - C	SAP Account Code
14D (333)	T6ESAPWA	8 - C	SAP Work Area
155 (341)	T6ESAPWT	1 - C	SAP Weight Indicator
156 (342)	T6ESAPTM	4 - C	SAP Terminal ID
Note: End of MANTIS and SAP record overlay			
15B (347)	T6EUCLT1	04 - K	DL/I PSB Schedule Time
15F (351)	T6EUCLC1	02 - B	DL/I PSB Schedule Count
161 (353)	T6EUCLT2	04 - K	DL/I PSB Active Time
165 (357)	T6EUCLC2	02 - B	DL/I PSB Active Count
167 (359)	T6EUCLT3	04 - K	DL/I Database Call Time
16B (363)	T6EUCLC3	02 - B	DL/I Database Call Count
16D (365)	T6EUCLT4	04 - K	DL/I I/O Wait Time
171 (369)	T6EUCLC4	02 - B	DL/I I/O Wait Count
173 (371)	T6ECORR	08 - C	DB2 Correlation ID
17B (379)	T6EAUTH	08 - C	DB2 Authorization ID
183 (387)	T6ESPAR	02 - B	Traced Statements
185 (389)	T6EUCNT1	04 - B	DL/I GU Requests
189 (393)	T6EUCNT2	04 - B	DL/I GN Requests
18D (397)	T6EUCNT3	04 - B	DL/I GNP Requests
191 (401)	T6EUCNT4	04 - B	DL/I GHU Requests
195 (405)	T6EUCNT5	04 - B	DL/I GHN Requests
199 (409)	T6EUCNT6	04 - B	DL/I GHNP Requests
19D (413)	T6EUCNT7	04 - B	DL/I ISRT Requests
1A1 (417)	T6EUCNT8	04 - B	DL/I DLET Requests

Table 10. Type 6D or 6E Transaction Detail Record Fields by Offset (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1A5 (421)	T6EUCNT9	04 - B	DL/I REPL Requests
1A9 (425)	T6EUCNTA	04 - B	DL/I TOTAL Requests
Note:	The T6EUCxxx fields report DL/I activity for DBCTL. Monitoring data is returned by DBCTL for CICS tasks when the correct event monitoring point IDs (DBCTL.1 and DBCTL.2) are specified in the Monitor Control Table (MCT). For DBCTL, the DBDNAME is not recorded; the activity is attributed to a generic DBCTL bucket.		
1AD (429)	T6EORIG	20 - C	Originating System
1C1 (449)	T6EUOW	08 - X	Unit of Work ID
1C9 (457)	T6ETSKFG	02 - X	Unused - Obsolete
1CB (459)	T6EPSHWM	04 - B	Program Storage High-Water Mark Total
1CF (463)	T6EPSBN	08 - C	Partition Specification Block, if used
1D7 (471)	T6EBMSN	08 - C	Mapset Name, if used
1DF (479)	T6EIRWWT	04 - B	Interregion (IRC) Wait Time
1E3 (483)	T6EIRWTC	02 - B	Interregion (IRC) Wait Count
1E5 (485)	T6ESTIME	04 - P	Transaction Start Time
1E9 (489)	T6EDB2P	08 - C	DB2 Plan Name
Note:	DBCTL task record overlay field		
1F1 (497)	T6EDBCCP	04 - B	DBCTL Task CPU Time
1F1 (497)	T6EDSQL1	04 - B	DB2 First SQL Elapsed Time
Note:	End of DBCTL task record overlay field		
1F5 (501)	T6EDSLCT	04 - B	DB2 SELECT Count (Total for Task)
1F9 (505)	T6EDOPEN	04 - B	DB2 OPEN CURSOR Count (Total for Task)
1FD (509)	T6EDCLOS	04 - B	DB2 CLOSE CURSOR Count (Total for Task)
201 (513)	T6EDINS	04 - B	DB2 INSERT Count (Total for Task)
205 (517)	T6EDDEL	04 - B	DB2 DELETE Count (Total for Task)
209 (521)	T6EDUPD	04 - B	DB2 UPDATE Count (Total for Task)
20D (525)	T6EDFTCH	04 - B	DB2 FETCH Count (Total for Task)
211 (529)	T6EDCOMT	04 - B	DB2 COMMIT Count (Total for Task)
215 (533)	T6EDOTHR	04 - B	DB2 OTHER SQL Count (Total for Task)
219 (537)	T6EDB2T	01 - C	DB2 Thread Type Used: P = POOL G = GROUP

Table 10. Type 6D or 6E Transaction Detail Record Fields by Offset (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
21A (538)	T6EDB2W	01 - C	DB2 Thread Wait Indicator: 1 = YES 0 = NO
21B (539)	T6EXCWWT	04 - K	Exception Wait Time
21F (543)	T6EXCWC	02 - B	Exception Wait Count
221 (545)	T6EDQWWT	04 - K	Dispatch Queue Wait Time
225 (549)	T6EDQWC	02 - B	Dispatch Queue Wait Count
227 (551)	T6EXSTOR	01 - C	Storage Exception Indicator
228 (552)	T6EXTEMP	01 - C	Temporary Storage Exception Indicator
229 (553)	T6EXTBUF	01 - C	Temporary Storage Buffer Exception
22A (554)	T6EXTSTR	01 - C	Temporary Storage String Exception
22B (555)	T6ETCLAS	02 - B	Transaction Class at Task Start
22D (557)	T6ETPRI	02 - B	Transaction Priority at Task Start
22F (559)	T6ESHWME	04 - B	Extended Storage High-Water Mark
233 (563)	T6ESTGOE	04 - B	Extended Storage Occupancy
237 (567)	T6ESCUCE	04 - B	Extended Storage GETMAIN Count
23B (571)	T6EP24HW	04 - B	Below 16 MB Storage Used
23F (575)	T6EXFSTR	01 - C	File Control String Wait
240 (576)	T6EXFBUF	01 - C	File Control Buffer Wait
241 (577)	T6ETRTY2	01 - C	Extension for Transaction Type
242 (578)	T6EQUAL	01 - B	Record Extension Flags: X'01' = CICS Version 4.1 Data X'02' = CICS Version 5.1/5.2 (CTS Version 1.1/1.2) Data X'04' = CICS Version 5.3 (CTS Version 1.3) Data X'80' = Expanded File Data A value greater than X'80' indicates expanded file data and data for a particular version of CICS is included in the record.
243 (579)	T6EFCNT	01 - B	Count of Files that Follow If CMRSOPT parameter FILEXPND=NO, the maximum number of files is 255. If FILEXPND=YES, the maximum is 60.
244 (580)	T6EEXPID	04 - C	Area Identifier

Table 10. Type 6D or 6E Transaction Detail Record Fields by Offset (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
248 (584)	T6ECMPB2	08 - X	Record Compress Field Bit Map
250 (592)	T6EOFFXT	04 - B	Offset to Extensions
254 (596)	T6EOFFFL	04 - B	Offset to File Data
258 (600)	T6EMVREL	04 - C	MAINVIEW for CICS Release Level
25C (604)	T6ECIREL	04 - C	CICS Release Level
260 (608)	T6ESMFID	04 - C	MVS SMF ID
264 (612)	T6ETKSTR	08 - X	Task Start Time (Store Clock Format)
26C (620)	T6ETKSTO	08 - X	Task Stop Time (Store Clock Format)
274 (628)	T6EAPLID	08 - C	CICS Application ID
27C (636)	T6EDB2SS	04 - C	DB2 Subsystem ID
280 (640)	T6EDB2AL	08 - C	DB2 Alias Name
288 (648)	T6EUCPUT	08 - X	Total CPU Time (USRCPUT)
290 (656)	T6EDTRID	08 - C	Detail Trace ID
298 (664)	T6ECPROR	01 - C	Original Compression ID
299 (665)		25 - B	Reserved for Future Use
2B2 (690)		26 - B	Reserved for Future Use
2CC (716)	T6E53XCT	04 - B	Count of CICS Version 5.3 (CTS Version 1.3) Extensions in Summary
2D0 (720)	T6E52XCT	04 - B	Count of CICS Version 5.1 and 5.2 (CTS Version 1.1 and 1.2) Extensions in Summary
2D4 (724)	T6E41XCT	04 - B	Count of CICS Version 4.1 Extensions in Summary
2D8 (728)	T6EFLXCT	04 - B	Count of Expanded Files in Summary
2DC (732)	T6E42ID	04 - C	Area Identifier - CICS Version 4.1 Data
2E0 (736)	T6ECMP41	08 - X	Record Compress Field Bit Map
2E8 (744)	T6ESUSPT	04 B	Suspend Time - Other
2EC (748)	T6ESUSPC	02 B	Suspend Count - Other
2EE (750)	T6EBMMC	04 - B	Basic Mapping Support (BMS) Map Requests
2F2 (754)	T6EBMIC	04 - B	BMS In Requests
2F6 (758)	T6EBMOC	04 - B	BMS Out Requests
2FA (762)	T6EBMTC	04 - B	BMS Total Requests

Table 10. Type 6D or 6E Transaction Detail Record Fields by Offset (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
2FE (766)	T6ETDTC	04 - B	Transient Data Requests
302 (770)	T6ETSTC	04 - B	Temporary Storage Requests
306 (774)	T6EPC31R	04 - B	Program Storage High-Water Mark in ERDSA
30A (778)	T6EFDDLT	04 - B	First Dispatch Delay Time
30E (782)	T6EFDDLC	02 - B	First Dispatch Delay Count
310 (784)	T6EFDTCT	04 - B	Dispatch Delay for Transaction Class Wait Time
314 (788)	T6EFDTCC	02 - B	Dispatch Delay for Transaction Class Wait Count
316 (790)	T6EFDMWT	04 - B	Dispatch Delay for Max Tasks Wait Time
31A (794)	T6EFDMXC	02 - B	Dispatch Delay for Max Tasks Wait Count
31C (796)	T6ENQDLT	04 - B	Enqueue Delay Time
320 (800)	T6ENQDLC	02 - B	Enqueue Delay Count
322 (802)	T6ERSYS	04 - C	Remote CICS SYSID
326 (806)	T6E61WWT	04 - B	LU6.1 Wait Time
32A (810)	T6E61WTC	02 - B	LU6.1 Wait Count
32C (812)	T6E62WWT	04 - B	LU6.2 Wait Time
330 (816)	T6E62WTC	02 - B	LU6.2 Wait Count
332 (818)	T6E62IMC	04 - B	LU6.2 Alternate Messages Received
336 (822)	T6E62OMC	04 - B	LU6.2 Alternate Messages Sent
33A (826)	T6E62ICH	04 - B	LU6.2 Alternate Bytes Received
33E (830)	T6E62OCH	04 - B	LU6.2 Alternate Bytes Sent
342 (834)	T6EPC31H	04 - B	Program Storage High-Water Mark above the 16 MB Line
346 (838)	T6EPC31C	04 - B	Program Storage High-Water Mark in ECDSA
34A (842)	T6EPC24C	04 - B	Program Storage High-Water Mark in CDSA
34E (846)	T6ESZACT	04 - B	Front-End Programming Interface (FEPI) Conversations Allocated
352 (850)	T6ESZRCT	04 - B	FEPI Receive/Converse Count
356 (854)	T6ESZSCT	04 - B	FEPI Send/Converse Count
35A (858)	T6ESZTCT	04 - B	FEPI Start Count
35E (862)	T6ESZCOT	04 - B	FEPI Characters Sent
362 (866)	T6ESZCIN	04 - B	FEPI Characters Received

Table 10. Type 6D or 6E Transaction Detail Record Fields by Offset (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
366 (870)	T6ESZWWT	04 - B	FEPI Wait Time
36A (874)	T6ESZWTC	02 - B	FEPI Wait Count
36C (876)	T6ESZATO	04 - B	FEPI Timeouts for Allocate
370 (880)	T6ESZRTO	04 - B	FEPI Timeouts for Receive
374 (884)	T6ESZTOT	04 - B	FEPI Total Requests
378 (888)	T6EPC24S	04 - B	Program Storage High-Water Mark in SDSA
37C (892)	T6EPC31S	04 - B	Program Storage High-Water Mark in ESDSA
380 (896)	T6EPC24R	04 - B	Program Storage High-Water Mark in RDSA
384 (900)	T6ETCLNM	08 - C	Transaction Class Name
38C (908)	T6ERMITT	04 - B	Resource Manager Interface (RMI) Elapsed Time
390 (912)	T6ERMITC	02 - B	RMI Elapsed Count
392 (914)	T6ERMIST	04 - B	RMI Suspend Time
396 (918)	T6ERMISC	02 - B	RMI Suspend Count
398 (920)	T6EDSPDT	04 - B	Dispatch Delay Time
39C (924)	T6EDSPDC	02 - B	Dispatch Delay Count
39E (926)	T6ETCTAL	04 - B	TCTTE Allocate Requests
3A2 (930)	T6EFCAM	04 - B	File Control Access Count
3A6 (934)	T6ETASKF	04 - X	Task Error Flags
3AA (938)	T6ERTYPE	02 - C	CICS Performance Record Type: C = Terminal Converse S = Sync Point D = User EMP Deliver T = Task Termination F = Long Running Transaction
3AC (940)	T6EMSGI2	04 - B	TCMSGIN2 Field from CICS Performance Record
3B0 (944)	T6EMSGO2	04 - B	TCMSGOU2 Field from CICS Performance Record
3B4 (948)	T6ECHRI2	04 - B	TCCHRIN2 Field from CICS Performance Record
3B8 (952)	T6ECHRO2	04 - B	TCCHROU2 Field from CICS Performance Record
3BC (956)	T6EUSTO	08 - B	SCUSRSTG Field from CICS Performance Record
3C4 (964)	T6EEUSTO	08 - B	SCUCRSTG Field from CICS Performance Record
3CC (972)	T6E31OCC	08 - B	SC31COCC Field from CICS Performance Record
3D4 (980)	T6E24OCC	08 - B	SC24COCC Field from CICS Performance Record

Table 10. Type 6D or 6E Transaction Detail Record Fields by Offset (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
3DC (988)	T6E31UHW	04 - B	SC31CHWM Field from CICS Performance Record
3E0 (992)	T6E24UHW	04 - B	SC24CHWM Field from CICS Performance Record
3E4 (996)	T6EGMCD	04 - B	SCCGETCT (117) Field from CICS Performance Record
3E8 (1000)	T6EGMECD	04 - B	SCCGETCT (120) Field from CICS Performance Record
3EC (1004)	T6E52ID	04 - C	Area Identifier - CICS Version 5.1 and 5.2 Data
3F0 (1008)	T6ECMP52	04 - X	Record Compress Field Bit Map
3F4 (1012)	T6EICTC	04 - B	Interval Control Requests
3F8 (1016)	T6EPCLUC	04 - B	Program Link URM Requests
3FC (1020)	T6EBRTID	04 - C	3270 Bridge Transaction ID
400 (1024)	T6ELMDLT	04 - B	Lock Manager Delay Time
404 (1028)	T6ELMDLC	02 - B	Lock Manager Delay Count
406 (1030)	T6ERMUOW	08 - X	Unit of Recovery ID
40E (1038)	T6ESC24S	04 - B	GETMAIN Requests in CDSA/SDSA
412 (1042)	T6ESC24G	04 - B	Number of Bytes GETMAINed in CDSA/SDSA
416 (1046)	T6ESC24F	04 - B	Number of Bytes FREEMAINed in CDSA/SDSA
41A (1050)	T6ESC31S	04 - B	GETMAIN Requests in ECDSA/ESDSA
41E (1054)	T6ESC31G	04 - B	Number of Bytes GETMAINed in ECDSA/ESDSA
422 (1058)	T6ESC31F	04 - B	Number of Bytes FREEMAINed in ECDSA/ESDSA
426 (1062)	T6EFCTY	04 - C	Facility Name
42A (1066)	T6ESRVCL	08 - C	MVS WLM Service Class Name
432 (1074)	T6ERPTCL	08 - C	MVS WLM Report Class Name
43A (1082)	T6ETECNM	04 - C	Terminal Session Connection Name
43E (1086)	T6ELGWCT	04 - B	Log Stream Write Count
442 (1090)	T6ESYNTT	04 - B	Sync Point Elapsed Time
446 (1094)	T6ESYNCC	02 - B	Sync Point Elapsed Count
448 (1096)	T6ERLSWT	04 - B	Record-Level Sharing (RLS) Wait Time
44C (1100)	T6ERLSWC	02 - B	RLS Wait Count
44E (1102)	T6ERLSCT	04 - B	RLS SRB CPU Time
452 (1106)	T6ERLSCC	02 - B	RLS SRB CPU Count
454 (1108)	T6ETSSWT	04 - B	Temporary Storage Shared Wait Time

Table 10. Type 6D or 6E Transaction Detail Record Fields by Offset (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
458 (1112)	T6ETSSWC	02 - B	Temporary Storage Shared Wait Count
45A (1114)	T6EWTXWT	04 - B	External Wait Time
45E (1118)	T6EWTXWC	02 - B	External Wait Count
460 (1120)	T6EWCEWT	04 - B	CICS Wait Time
464 (1124)	T6EWCEWC	02 - B	CICS Wait Count
466 (1126)	T6EICDLT	04 - B	Interval Control Wait Time
46A (1130)	T6EICDLC	02 - B	Interval Control Wait Count
46C (1132)	T6EGVPWT	04 - B	Give Up Control Wait Time
470 (1136)	T6EGVPWC	02 - B	Give Up Control Wait Count
472 (1138)	T6ETRNFG	08 - X	Transaction Flags
47A (1146)	T6ETMINF	04 - X	Terminal Information
47E (1150)	T6ERECCT	04 - B	Number of CICS Performance Records
482 (1154)	T6E53ID	04 - C	Area Identifier - CICS Version 5.3 Data
486 (1158)	T6ECMP53	12 - X	Record Compress Field Bit Map
492 (1170)	T6EGQDLT	04 - B	Global Enqueue Time
496 (1174)	T6EGQDLC	02 - B	Global Enqueue Count
498 (1176)	T6ECFDWT	04 - B	Coupling Facility Data Tables (CFDT) Wait Time
49C (1180)	T6ECFDTC	02 - B	CFDT Wait Count
49E (1182)	T6ESYWT	04 - B	CFDT Sync/Resync Time
4A2 (1186)	T6ESYWTC	02 - B	CFDT Sync/Resync Count
4A4 (1188)	T6EIMSWT	04 - B	IMS (DBCTL) Request Wait Time
4A8 (1192)	T6EIMSWC	02 - B	IMS (DBCTL) Request Wait Count
4AA (1194)	T6ERDQWT	04 - B	DB2 Thread Wait Time
4AE (1198)	T6ERDQWC	02 - B	DB2 Thread Wait Count
4B0 (1200)	T6ECONTT	04 - B	DB2 Wait for Subtask Time
4B4 (1204)	T6ECONWC	02 - B	DB2 Wait for Subtask Count
4B6 (1206)	T6EDB2WT	04 - B	DB2 SQL/IFI Wait Time
4BA (1210)	T6EDB2WC	02 - B	DB2 SQL/IFI Wait Count
4BC (1212)	T6ERRSWT	04 - B	In-doubt RRS for EXCI Wait Time
4C0 (1216)	T6ERRSWC	02 - B	In-doubt RRS for EXCI Wait Count

Table 10. Type 6D or 6E Transaction Detail Record Fields by Offset (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
4C2 (1218)	T6ERTRWT	04 - B	Business Transaction Service (BTS) Wait Time
4C6 (1222)	T6ERTRWC	02 - B	BTS Wait Count
4C8 (1224)	T6ESYDLT	04 - B	BTS Parent Transaction Wait Time
4CC (1228)	T6ESYDLC	02 - B	BTS Parent Transaction Wait Count
4CE (1230)	T6ESIOWT	04 - B	Socket I/O Wait Time
4D2 (1234)	T6ESIOWC	02 - B	Socket I/O Wait Count
4D4 (1236)	T6EQRDLT	04 - B	Redispatch on Quasi-Reentrant TCB Wait Time
4D8 (1240)	T6EQRDLC	02 - B	Redispatch on Quasi-Reentrant TCB Wait Count
4DA (1242)	T6ETADLT	04 - B	CICS Open TCB Wait Time
4DE (1246)	T6ETADLC	02 - B	CICS Open TCB Wait Count
4E0 (1248)	T6EJVMST	04 - B	JAVA Virtual Machine Wait Time
4E4 (1252)	T6EJVMSC	02 - B	JAVA Virtual Machine Wait Count
4E6 (1254)	T6EJVMTT	04 - B	JAVA Virtual Machine Elapsed Time
4EA (1258)	T6EJVMTC	02 - B	JAVA Virtual Machine Elapsed Count
4EC (1260)	T6EQRDTT	04 - B	Quasi-Reentrant TCB Elapsed Time
4F0 (1264)	T6EQRDTC	02 - B	Quasi-Reentrant TCB Elapsed Count
4F2 (1266)	T6EQRPTT	04 - B	Quasi-Reentrant TCB Processor Time
4F6 (1270)	T6EQRPTC	02 - B	Quasi-Reentrant TCB Processor Count
4F8 (1272)	T6EMSDTT	04 - B	Other TCB Elapsed Time
4FC (1276)	T6EMSDTC	02 - B	Other TCB Elapsed Count
4FE (1278)	T6EMSPTT	04 - B	Other TCB Processor Time
502 (1282)	T6EMSPTC	02 - B	Other TCB Processor Count
504 (1284)	T6EL8PTT	04 - B	L8 TCB Processor Time
508 (1288)	T6EL8PTC	02 - B	L8 TCB Processor Count
50A (1290)	T6EJ8PTT	04 - B	J8 TCB Processor Time
50E (1294)	T6EJ8PTC	02 - B	J8 TCB Processor Count
510 (1296)	T6ES8PTT	04 - B	S8 TCB Processor Time
514 (1300)	T6ES8PTC	02 - B	S8 TCB Processor Count
516 (1302)	T6EPRCSN	36 - C	BTS Process Name
53A (1338)	T6EPRCST	08 - C	BTS Process Type

Table 10. Type 6D or 6E Transaction Detail Record Fields by Offset (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
542 (1346)	T6EPRCSD	52 - C	BTS Root Activity ID
576 (1398)	T6EACTID	52 - C	BTS Activity ID
5AA (1450)	T6EACTNM	16 - C	BTS Activity Name
5BA (1466)	T6EBTSYN	04 - B	BTS Synchronous Run Requests
5BE (1470)	T6EBTASY	04 - B	BTS Asynchronous Run Requests
5C2 (1474)	T6EBTLNK	04 - B	BTS Link Requests
5C6 (1478)	T6EBTDFP	04 - B	BTS Define Process Requests
5CA (1482)	T6EBTDFA	04 - B	BTS Activity Process Requests
5CE (1486)	T6EBTRES	04 - B	BTS Reset Requests
5D2 (1490)	T6EBTSUP	04 - B	BTS Suspend Requests
5D6 (1494)	T6EBTRSM	04 - B	BTS Resume Requests
5DA (1498)	T6EBTDEL	04 - B	BTS Delete Requests
5DE (1502)	T6EBTACQ	04 - B	BTS Acquire Requests
5E2 (1506)	T6EBTTLR	04 - B	BTS Total Requests
5E6 (1510)	T6EPDCCT	04 - B	BTS Process Data Container Requests
5EA (1514)	T6EADCCT	04 - B	BTS Activity Data Container Requests
5EE (1518)	T6ETLCCT	04 - B	BTS Total Data Container Requests
5F2 (1522)	T6EBTRRE	04 - B	BTS Retrieve/Reattach Event Requests
5F6 (1526)	T6EBTDIE	04 - B	BTS Define Input Event Requests
5FA (1530)	T6EBTTME	04 - B	BTS Timer Event Requests
5FE (1534)	T6EBTTEV	04 - B	BTS Total Event Requests
602 (1538)	T6EAPICT	04 - B	Foundation Class Requests
606 (1542)	T6EDBCCT	04 - B	IMS (DBCTL) Requests
60A (1546)	T6EDB2CT	04 - B	DB2 (EXEC SQL and IFI) Requests
60E (1550)	T6EDHCCT	04 - B	Document Header Create Requests
612 (1554)	T6EDHICT	04 - B	Document Header Insert Requests
616 (1558)	T6EDHSCT	04 - B	Document Header Set Requests
61A (1562)	T6EDHRCT	04 - B	Document Header Retrieve Requests
61E (1566)	T6EDHTCT	04 - B	Document Header Total Requests
622 (1570)	T6EDHTLN	04 - B	Total Length of Documents

Table 10. Type 6D or 6E Transaction Detail Record Fields by Offset (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
626 (1574)	T6EDPLCT	04 - B	DPL Requests
62A (1578)	T6ESBECT	04 - B	Socket Bytes Encrypted
62E (1582)	T6ESBDCT	04 - B	Socket Bytes Decrypted
632 (1586)	T6ESIPAD	16 - C	Client IP Address
642 (1602)	T6EURID	16 - C	Resource Recovery Management Services MVS Unit of Recovery ID
652 (1618)	T6ECGTCT	04 - B	TCB Change Modes Count
656 (1622)	T6ETCBCT	04 - B	TCBs Attached Count
65A (1626)	T6EWBRCT	04 - B	Web Receive Requests
65E (1630)	T6EWBCHI	04 - B	Total Web Characters Received
662 (1634)	T6EWBSCT	04 - B	Web Send Requests
666 (1638)	T6EWBCHO	04 - B	Total Web Characters Sent
66A (1642)	T6EWBTCT	04 - B	Total Web Requests
66E (1646)	T6EWBRRD	04 - B	Web Repository Reads
672 (1650)	T6EWBRWR	04 - B	Web Repository Writes
676 (1654)	T6EFI	01 - C	File Type Represented by T6EFN: A = Adabas P = Pseudo file C = CICS S = Supra D = Datacom Z = SAP K = System 2000 1 = DL/I User value 2 = DB2
677 (1655)	T6EFN	08 - C	File or Database Name
67F (1663)		01	Reserved for Future Use
680 (1664)	T6EFT	04 - B	Elapsed File Time for Waits
684 (1668)	T6EFC	02 - B	Number of File I/O Waits or Calls
Note: If CMRSOPT parameter FILEXPND=NO, repeat offset 676 (1654) through 684 (1668), up to 255 times, beginning at offset 686 (1670).			
686 (1670)	T6ERD	04 - B	File READ or DB2 SELECT Count (By File)
68A (1674)	T6ERU	04 - B	File READ FOR UPDATE or DB2 OPEN CURSOR Count (By File)
68E (1678)	T6EWR	04 - B	File WRITE or DB2 CLOSE CURSOR Count (By File)
692 (1682)	T6ERW	04 - B	File REWRITE or DB2 INSERT Count (By File)

Table 10. Type 6D or 6E Transaction Detail Record Fields by Offset (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
696 (1686)	T6EDL	04 - B	File DELETE or DB2 DELETE Count (By File)
69A (1690)	T6EUL	04 - B	File UNLOCK or DB2 UPDATE Count (By File)
69E (1694)	T6ESB	04 - B	File START BROWSE or DB2 FETCH Count (By File)
6A2 (1698)	T6ERN	04 - B	File READ NEXT or DB2 COMMIT Count (By File)
6A6 (1702)	T6ERP	04 - B	File READ PREVIOUS or DB2 OTHER SQL Count (By File)
6AA (1706)	T6EEB	04 - B	File END BROWSE Count (By File)
6AE (1710)	T6ERB	04 - B	File RESET BROWSE Count (By File)
6B2 (1714)	T6EOT	04 - B	File Other Count (By File)
6B6 (1718)	T6EV1	06 - C	First Volume Serial Number
6BC (1724)	T6EV2	06 - C	Second Volume Serial Number
6C2 (1730)	T6EV3	06 - C	Third Volume Serial Number
6C8 (1736		02	Reserved for Future Use
6CA (1738)		08	Reserved for Future Use
Note: If CMRSOPT parameter FILEXPND=YES, repeat Offset 676 (1654) through 6CA (1738), up to 60 times, beginning at offset 6D2 (1746).			
*			End of Record

CMRDETL Record Fields by Function

Table 11 lists the fields of a Type 6D or 6E transaction detail record by function. Related fields are grouped by the major categories of information contained within a record (such as task, terminal, and so on). The fields are listed alphabetically within each category.

Table 11. Type 6D or 6E Transaction Detail Record Fields by Function

Field Description	Field Name	Offset HEX (DEC)	Length (DEC) - Type
Task			
3270 Bridge Transaction ID	T6EBRTID	3FC (1020)	04 - C
Business Transaction Service (BTS) Wait Count	T6ERTRWC	4C6 (1222)	02 - B
BTS Wait Time	T6ERTRWT	4C2 (1218)	04 - B
BTS Parent Transaction Wait Count	T6ESYDLC	4CC (1228)	02 - B
BTS Parent Transaction Wait Time	T6ESYDLT	4C8 (1224)	04 - B
CICS User ID	T6EUSER	98 (152)	08 - C
CICS Wait Count	T6EWCEWC	464 (1124)	02 - B
CICS Wait Time	T6EWCEWT	460 (1120)	04 - B
CPU Real Time	T6ECPUR	EA (234)	04 - X
Dispatch (CPU) Clock Time Count	T6EDISTC	44 (68)	02 - B
Dispatch (CPU) Clock Time	T6EDISTT	40 (64)	04 - B
Dispatch Delay for Max Tasks Count	T6EFDMXC	31A (794)	02 - B
Dispatch Delay for Max Tasks Time	T6EFDMTT	316 (790)	04 - B
Dispatch Delay for Transaction Class Count	T6EFDTCC	314 (788)	02 - B
Dispatch Delay for Transaction Class Time	T6EFDTCT	310 (784)	04 - B
Dispatch Delay Count	T6EDSPDC	39C (924)	02 - B
Dispatch Delay Time	T6EDSPDT	398 (920)	04 - B
Dispatch Queue Wait Count	T6EDQWC	225 (549)	02 - B
Dispatch Queue Wait Time	T6EDQWWT	221 (545)	04 - B
Enqueue Delay Count	T6ENQDLC	320 (800)	02 - B
Enqueue Delay Time	T6ENQDLT	31C (796)	04 - B
Exception Wait Count	T6EXCWC	21F (543)	02 - B
Exception Wait Time	T6EXCWWT	21B (539)	04 - B
External Wait Count	T6EWTXWC	45E (1118)	02 - B
External Wait Time	T6EWTXWT	45A (1114)	04 - B

Table 11. Type 6D or 6E Transaction Detail Record Fields by Function (Continued)

Field Description	Field Name	Offset HEX (DEC)	Length (DEC) - Type
Facility Name	T6EFCTY	426 (1062)	04 - C
First Dispatch Delay Count	T6EFDDLC	30E (782)	02 - B
First Dispatch Delay Time	T6EFDDLT	30A (778)	04 - B
First Dispatch Queue Time Only	T6EDSPQ	B8 (184)	04 - B
Give Up Control Wait Count	T6EGVPWC	470 (1136)	02 - B
Give Up Control Wait Time	T6EGVPWT	46C (1132)	04 - B
Global Enqueue Count	T6EGQDLC	496 (1174)	02 - B
Global Enqueue Time	T6EGQDLT	492 (1170)	04 - B
In-Doubt RRS for EXCI Count	T6ERRSWC	4C0 (1216)	02 - B
In-Doubt RRS for EXCI Time	T6ERRSTT	4BC (1212)	04 - B
Interregion (IRC) Wait Count	T6EIRWTC	1E3 (483)	02 - B
Interregion (IRC) Wait Time	T6EIRWWT	1DF (479)	04 - B
Interval Control Put/Initiate Count	T6EICC	132 (306)	04 - B
Interval Control Requests	T6EICTC	3F4 (1012)	04 - B
Interval Control Wait Count	T6EICDLC	46A (1130)	02 - B
Interval Control Wait Time	T6EICDLT	466 (1126)	04 - B
J8 TCB Processor Count	T6EJ8PTC	50E (1294)	02 - B
J8 TCB Processor Time	T6EJ8PTT	50A (1290)	04 - B
JAVA Virtual Machine Elapsed Count	T6EJVMTC	4EA (1258)	02 - B
JAVA Virtual Machine Elapsed Time	T6EJVMTT	4E6 (1254)	04 - B
JAVA Virtual Machine Wait Count	T6EJVMSC	4E4 (1252)	02 - B
JAVA Virtual Machine Wait Time	T6EJVMST	4E0 (1248)	04 - B
L8 TCB Processor Count	T6EL8PTC	508 (1288)	02 - B
L8 TCB Processor Time	T6EL8PTT	504 (1284)	04 - B
Lock Manager Delay Count	T6ELMDLC	404 (1028)	02 - B
Lock Manager Delay Time	T6ELMDLT	400 (1024)	04 - B
Mapset Name	T6EBMSN	1D7 (471)	08 - C
CICS Open TCB Wait Count	T6ETADLC	4DE (1246)	02 - B
CICS Open TCB Wait Time	T6ETADLT	4DA (1242)	04 - B
Multiple Abend Codes	T6EABCD	B0 (176)	08 - C

Table 11. Type 6D or 6E Transaction Detail Record Fields by Function (Continued)

Field Description	Field Name	Offset HEX (DEC)	Length (DEC) - Type
Operator ID	T6EOPID	2C (44)	03 - C
Originating System	T6EORIG	1AD (429)	20 - C
Other TCB Elapsed Count	T6EMSDTC	4FC (1276)	02 - B
Other TCB Elapsed Time	T6EMSDTT	4F8 (1272)	04 - B
Other TCB Processor Count	T6EMSPTC	502 (1282)	02 - B
Other TCB Processor Time	T6EMSPTT	4FE (1278)	04 - B
Quasi-Reentrant TCB Elapsed Count	T6EQRDTC	4F0 (1264)	02 - B
Quasi-Reentrant TCB Elapsed Time	T6EQRDTT	4EC (1260)	04 - B
Quasi-Reentrant TCB Processor Count	T6EQRPTC	4F6 (1270)	02 - B
Quasi-Reentrant TCB Processor Time	T6EQRPTT	4F2 (1266)	04 - B
Redispatch on Quasi-Reentrant TCB Wait Count	T6EQRDLC	4D8 (1240)	02 - B
Redispatch on Quasi-Reentrant TCB Wait Time	T6EQRDLT	4D4 (1236)	04 - B
Response Time Total	T6ERESP	3C (60)	04 - B
Resource Manager (RMI) Elapsed Count	T6ERMITC	390 (912)	02 - B
RMI Elapsed Time	T6ERMITT	38C (908)	04 - B
RMI Suspend Count	T6ERMISC	396 (918)	02 - B
RMI Suspend Time	T6ERMIST	392 (914)	04 - B
Resource Recovery Management Services MVS Unit of Recovery ID	T6EURID	642 (1602)	16 - C
S8 TCB Processor Count	T6ES8PTC	514 (1300)	02 - B
S8 TCB Processor Time	T6ES8PTT	510 (1296)	04 - B
Suspend Count	T6ESUSTC	56 (86)	02 - B
Suspend Count - Other	T6ESUSPC	2EC (748)	02 - B
Suspend Time	T6ESUST	52 (82)	04 - B
Suspend Time - Other	T6ESUSPT	2E8 (744)	04 - B
Sync Point Count	T6ESPPC	136 (310)	04 - B
Sync Point Elapsed Count	T6ESYNCC	446 (1094)	02 - B
Sync Point Elapsed Time	T6ESYNTT	442 (1090)	04 - B
Task Error Flags	T6ETASKF	3A6 (934)	04 - X
Task Start Time (Store Clock Format)	T6ETKSTR	264 (612)	08 - X

Table 11. Type 6D or 6E Transaction Detail Record Fields by Function (Continued)

Field Description	Field Name	Offset HEX (DEC)	Length (DEC) - Type
Task Stop Time (Store Clock Format)	T6ETKSTO	26C (620)	08 - X
TCBs Attached Count	T6ETCBCT	656 (1622)	04 - B
TCB Change Modes Count	T6ECGTCT	652 (1618)	04 - B
Transaction Class at Task Start	T6ETCLAS	22B (555)	02 - B
Transaction Class Name	T6ETCLNM	384 (900)	08 - C
Transaction Flags	T6ETRNFG	472 (1138)	08 - X
Transaction Priority at Task Start	T6ETPRI	22D (557)	02 - B
Transaction Start Time	T6ESTIME	1E5 (485)	04 - P
Transaction Subtype: A ATI-attached C Conversational task D Transient data trigger-attached F FEPI S System-internal task T Terminal-attached Z Pseudo-conversational	T6ETRTY	E5 (229)	01 - C
Extension for Transaction Type	T6ETRTY2	241 (577)	01 - C
Total CPU Time (USRCPUT)	T6EUCPUT	288 (648)	08 - X
Unit of Recovery ID	T6ERMUOW	406 (1030)	08 - X
Unit of Work ID	T6EUOW	1C1 (449)	08 - X
User Data	T6EUDATA	D2 (210)	18 - C
User ECB Wait Count	T6EECWTC	6E (110)	02 - B
User ECB Wait Time	T6EECWT	6A (106)	04 - B
Terminal			
LU6.1 Wait Count	T6E61WTC	32A (810)	02 - B
LU6.1 Wait Time	T6E61WWT	326 (806)	04 - B
LU6.2 Alternate Bytes Received	T6E62ICH	33A (826)	04 - B
LU6.2 Alternate Bytes Sent	T6E62OCH	33E (830)	04 - B
LU6.2 Alternate Messages Received	T6E62IMC	332 (818)	04 - B
LU6.2 Alternate Messages Sent	T6E62OMC	336 (822)	04 - B
LU6.2 Wait Count	T6E62WTC	330 (816)	02 - B
LU6.2 Wait Time	T6E62WWT	32C (812)	04 - B

Table 11. Type 6D or 6E Transaction Detail Record Fields by Function (Continued)

Field Description	Field Name	Offset HEX (DEC)	Length (DEC) - Type
Messages from a Program to the Terminal	T6EMSGO	A4 (164)	04 - B
Messages from the Terminal to CICS	T6EMSGI	A0 (160)	04 - B
Network ID of Terminal	T6ENETNM	C4 (196)	08 - C
Number of Bytes in Messages from a Program to the Terminal	T6ECHARO	AC (172)	04 - B
Number of Bytes in Messages from the Terminal to CICS	T6ECHARI	A8 (168)	04 - B
TCMSGIN2 Field from CICS Performance Record	T6EMSGI2	3AC (940)	04 - B
TCMSGOU2 Field from CICS Performance Record	T6EMSGO2	3B0 (944)	04 - B
TCCHRIN2 Field from CICS Performance Record	T6ECHRI2	3B4 (948)	04 - B
TCCHROU2 Field from CICS Performance Record	T6ECHRO2	3B8 (952)	04 - B
TCTTE Allocate Requests	T6ETCTAL	39E (926)	04 - B
Terminal Control Count	T6ETCWTC	5C (92)	02 - B
Terminal Control Time	T6ETCWT	58 (88)	04 - B
Terminal ID	T6ETMID	28 (40)	04 - C
Terminal Information	T6ETMINF	47A (1146)	04 - X
Terminal Session Connection Name	T6ETECNM	43A (1082)	04 - C
Program			
DFHRPL Wait Count	T6EPCWTC	7A (122)	02 - B
DFHRPL Wait Time	T6EPCWT	76 (118)	04 - B
DPL Requests	T6EDPLCT	626 (1574)	04 - B
Program Name (see T6EPTYPE)	T6EPGNM	20 (32)	08 - C
Program Storage High-Water Mark above the 16 MB Line	T6EPC31H	342 (834)	04 - B
Program Storage High-Water Mark in CDSA	T6EPC24C	34A (842)	04 - B
Program Storage High-Water Mark in ECDSA	T6EPC31C	346 (838)	04 - B
Program Storage High-Water Mark in ERDSA	T6EPC31R	306 (774)	04 - B
Program Storage High-Water Mark in ESDSA	T6EPC31S	37C (892)	04 - B
Program Storage High-Water Mark in RDSA	T6EPC24R	380 (896)	04 - B
Program Storage High-Water Mark in SDSA	T6EPC24S	378 (888)	04 - B
Program Storage High-Water Mark Total	T6EPSHWM	1CB (459)	04 - B

Table 11. Type 6D or 6E Transaction Detail Record Fields by Function (Continued)

Field Description	Field Name	Offset HEX (DEC)	Length (DEC) - Type
Storage			
Below 16 MB Storage Used	T6EP24HW	23B (571)	04 - B
Extended Storage GETMAIN Count	T6ESCUCE	237 (567)	04 - B
Extended Storage High-Water Mark	T6ESHWME	22F (559)	04 - B
Extended Storage Occupancy	T6ESTGOE	233 (563)	04 - B
GETMAIN Requests in CDSA/SDSA	T6ESC24S	40E (1038)	04 - B
GETMAIN Requests in ECDSA/ESDSA	T6ESC31S	41A (1050)	04 - B
Number of Bytes FREEMAINed in CDSA/SDSA	T6ESC24F	416 (1046)	04 - B
Number of Bytes FREEMAINed in ECDSA/ESDSA	T6ESC31F	422 (1058)	04 - B
Number of Bytes GETMAINed in CDSA/SDSA	T6ESC24G	412 (1042)	04 - B
Number of Bytes GETMAINed in ECDSA/ESDSA	T6ESC31G	41E (1054)	04 - B
SC24CHWM Field from CICS Performance Record	T6E24UHW	3E0 (992)	04 - B
SC31CHWM Field from CICS Performance Record	T6E31UHW	3DC (988)	04 - B
SC24COCC Field from CICS Performance Record	T6E24OCC	3D4 (980)	08 - B
SC31COCC Field from CICS Performance Record	T6E31OCC	3CC (972)	08 - B
SCCGETCT (117) Field from CICS Performance Record	T6EGMCD	3E4 (996)	04 - B
SCCGETCT (120) Field from CICS Performance Record	T6EGMECD	3E8 (1000)	04 - B
SCUCRSTG Field from CICS Performance Record	T6EEUSTO	3C4 (964)	08 - B
SCUSRSTG Field from CICS Performance Record	T6EUSTO	3BC (956)	08 - B
Storage Control User Get Count	T6ESCUC	11E (286)	04 - B
Storage Exception Indicator	T6EXSTOR	227 (551)	01 - C
Storage High-Water Mark	T6ESHWM	94 (148)	04 - B
Storage Occupancy (4 byte, preferred)	T6EUSTGS	BE (190)	04 - B
Storage Occupancy (8 byte, IBM default)	T6EUSTGO	BC (188)	08 - X
File			
Count of Files That Follow If CMRSOPT parameter FILEXPND=NO, the maximum number of files is 255. If FILEXPND=YES, the maximum is 60.	T6EFCNT	243 (579)	01 - B

Table 11. Type 6D or 6E Transaction Detail Record Fields by Function (Continued)

Field Description	Field Name	Offset HEX (DEC)	Length (DEC) - Type
Record Extension Flags A value of X'80' (128) or greater indicates that expanded file data is available.	T6EQUAL	242 (578)	01 - B
Elapsed File Time for Waits	T6EFT	680 (1664)	04 - B
File ADD Count (Total for Task)	T6EFCAC	FA (250)	04 - B
File BROWSE Count (Total for Task)	T6EFCBC	F6 (246)	04 - B
File or Database Name	T6EFN	677 (1655)	08 - C
File DELETE Count (By File)	T6EDL	696 (1686)	04 - B
File DELETE Count (Total for Task)	T6EFCDC	FE (254)	04 - B
File END BROWSE Count (By File)	T6EEB	6AA (1706)	04 - B
File GET Count (Total for Task)	T6EFCGC	EE (238)	04 - B
File Other Count (By File)	T6EOT	6B2 (1714)	04 - B
File PUT Count (Total for Task)	T6EFCPC	F2 (242)	04 - B
File READ Count (By File)	T6ERD	686 (1670)	04 - B
File READ FOR UPDATE Count (By File)	T6ERU	68A (1674)	04 - B
File READ NEXT Count (By File)	T6ERN	6A2 (1698)	04 - B
File READ PREVIOUS Count (By File)	T6ERP	6A6 (1702)	04 - B
File RESET BROWSE Count (By File)	T6ERB	6AE (1710)	04 - B
File REWRITE Count (By File)	T6ERW	692 (1682)	04 - B
File START BROWSE Count (By File)	T6ESB	69E (1694)	04 - B
File Type Represented by T6EFN: A =Adabas P = Pseudo file C = CICS S = Supra D = Datacom Z = SAP K = System 2000 1 = DL/I User value 2 = DB2	T6EFI	244 (580)	01 - C
File UNLOCK Count (By File)	T6EUL	69A (1690)	04 - B
File WRITE Count (By File)	T6EWR	68E (1678)	04 - B
First Volume Serial Number	T6EV1	6B6 (1718)	06 - C
Number of File I/O Waits or Calls	T6EFC	684 (1668)	02 - B
Other File Call Count (Total for Task)	T6EFCOC	102 (258)	04 - B

Table 11. Type 6D or 6E Transaction Detail Record Fields by Function (Continued)

Field Description	Field Name	Offset HEX (DEC)	Length (DEC) - Type
Second Volume Serial Number	T6EV2	6BC (1724)	06 - C
Third Volume Serial Number	T6EV3	6C2 (1730)	06 - C
DL/I (DBCTL)			
DBCTL Task CPU Time	T6EDBCCP	1F1 (497)	04 - B
DL/I Call Count	T6EDLIC	8C (140)	04 - B
DL/I Database Call Count	T6EUCLC3	16B (363)	02 - B
DL/I Database Call Time	T6EUCLT3	167 (359)	04 - K
DL/I DLET Requests	T6EUCNT8	1A1 (417)	04 - B
DL/I GHN Requests	T6EUCNT5	195 (405)	04 - B
DL/I GHNP Requests	T6EUCNT6	199 (409)	04 - B
DL/I GHU Requests	T6EUCNT4	191 (401)	04 - B
DL/I GN Requests	T6EUCNT2	189 (393)	04 - B
DL/I GNP Requests	T6EUCNT3	18D (397)	04 - B
DL/I GU Requests	T6EUCNT1	185 (389)	04 - B
DL/I ISRT Requests	T6EUCNT7	19D (413)	04 - B
DL/I I/O Count	T6EDIOTC	4A (74)	02 - B
DL/I I/O Time	T6EDIOTT	46 (70)	04 - B
DL/I I/O Wait Count	T6EUCLC4	171 (369)	02 - B
DL/I I/O Wait Time	T6EUCLT4	16D (365)	04 - K
DL/I PSB Active Count	T6EUCLC2	165 (357)	02 - B
DL/I PSB Active Time	T6EUCLT2	161 (353)	04 - K
DL/I PSB Schedule Count	T6EUCLC1	15F (351)	02 - B
DL/I PSB Schedule Time	T6EUCLT1	15B (347)	04 - K
DL/I REPL Requests	T6EUCNT9	1A5 (421)	04 - B
DL/I TOTAL Requests	T6EUCNTA	1A9 (425)	04 - B
IMS (DBCTL) Requests	T6EDBCCT	606 (1542)	04 - B
IMS (DBCTL) Request Wait Count	T6EIMSWC	4A8 (1192)	02 - B
IMS (DBCTL) Request Wait Time	T6EIMSWT	4A4 (1188)	04 - B

Table 11. Type 6D or 6E Transaction Detail Record Fields by Function (Continued)

Field Description	Field Name	Offset HEX (DEC)	Length (DEC) - Type
Non-DL/I Database Request Time	T6EDBRQT	CC (204)	04 - B
Non-DL/I Database Request Count	T6EDBRQC	D0 (208)	02 - B
Partition Specification Block	T6EPSBN	1CF (463)	08 - C
4GL/Database Products			
MANTIS Program Name	T6EMNTIS	13A (314)	33 - C
Program Name Type A = SAP C = CSP D = DMS G = GENER/OL I = IDEAL L = Millennium M = Mantis N = Natural S = PCS U = UFO blank = CICS program name	T6EPTYPE	E4 (228)	01 - C
SAP Account Code	T6ESAPAC	141 (321)	12 - C
SAP Authorization Code	T6ESAPMN	13F (319)	02 - C
SAP Task Type	T6ESAPTY	13E (318)	01 - C
SAP Terminal ID	T6ESAPTM	156 (342)	4 - C
SAP Transaction ID	T6ESAPLT	13A (314)	04 - C
SAP Weight Indicator	T6ESAPWT	155 (341)	1 - C
SAP Work Area	T6ESAPWA	14D (333)	8 - C
DB2			
Alias Name	T6EDB2AL	280 (640)	08 - C
Authorization ID	T6EAUTH	17B (379)	08 - C
CLOSE CURSOR Count (By File)	T6EWR	68E (1678)	04 - B
CLOSE CURSOR Count (Total for Task)	T6EDCLOS	1FD (509)	04 - B
COMMIT Count (By File)	T6ERN	6A2 (1698)	04 - B
COMMIT Count (Total for Task)	T6EDCOMT	211 (529)	04 - B
Correlation ID	T6ECORR	173 (371)	08 - C
DELETE Count (Total for Task)	T6EDDEL	205 (517)	04 - B
DELETE Count (By File)	T6EDL	696 (1686)	04 - B
EXEC SQL and IFI Requests	T6EDB2CT	60A (1546)	04 - B
FETCH Count (By File)	T6ESB	69E (1694)	04 - B
FETCH Count (Total for Task)	T6EDFTCH	20D (525)	04 - B
First SQL Elapsed Time	T6EDSQL1	1F1 (497)	04 - B

Table 11. Type 6D or 6E Transaction Detail Record Fields by Function (Continued)

Field Description	Field Name	Offset HEX (DEC)	Length (DEC) - Type
INSERT Count (By File)	T6ERW	692 (1682)	04 - B
INSERT Count (Total for Task)	T6EDINS	201 (513)	04 - B
OPEN CURSOR Count (By File)	T6ERU	68A (1674)	04 - B
OPEN CURSOR Count (Total for Task)	T6EDOPEN	1F9 (505)	04 - B
OTHER SQL Count (By File)	T6ERP	6A6 (1702)	04 - B
OTHER SQL Count (Total for Task)	T6EDOTHR	215 (533)	04 - B
Plan Name	T6EDB2P	1E9 (489)	08 - C
SELECT Count (By File)	T6ERD	686 (1670)	04 - B
SELECT Count (Total for Task)	T6EDSLCT	1F5 (501)	04 - B
SQL/IFI Wait Count	T6EDB2WC	4BA (1210)	02 - B
SQL/IFI Wait Time	T6EDB2WT	4B6 (1206)	04 - B
Subsystem ID	T6EDB2SS	27C (636)	04 - C
Thread Type Used: P = POOL G = GROUP	T6EDB2T	219 (537)	01 - C
Thread Wait Count	T6ERDQWC	4AE (1198)	02 - B
Thread Wait Indicator 1 = YES 0 = NO	T6EDB2W	21A (538)	01 - C
Thread Wait Time	T6ERDQWT	4AA (1194)	04 - B
UPDATE Count (By File)	T6EUL	69A (1690)	04 - B
UPDATE Count (Total for Task)	T6EDUPD	209 (521)	04 - B
Wait for Subtask Count	T6ECONWC	4B4 (1204)	02 - B
Wait for Subtask Time	T6ECONTT	4B0 (1200)	04 - B
Journal			
Journal Control Count	T6EJCWTC	68 (104)	02 - B
Journal Control PUT/WRITE Count	T6EJCC	12E (302)	04 - B
Journal Control Time	T6EJCWT	64 (100)	04 - B
Log Stream Write Count	T6ELGWCT	43E (1086)	04 - B

Table 11. Type 6D or 6E Transaction Detail Record Fields by Function (Continued)

Field Description	Field Name	Offset HEX (DEC)	Length (DEC) - Type
File Control			
Coupling Facility Data Tables (CFDT) Wait Count	T6ECFDTC	49C (1180)	02 - B
CFDT Wait Time	T6ECFDWT	498 (1176)	04 - B
CFDT Sync/Resync Count	T6ESYWTC	4A2 (1186)	02 - B
CFDT Sync/Resync Time	T6ESYWT	49E (1182)	04 - B
File Control Access Count	T6EFCAM	3A2 (930)	04 - B
File Control Buffer Wait	T6EXFBUF	240 (576)	01 - C
File Control Call Count	T6EFCCAL	88 (136)	04 - B
File Control I/O Time	T6EFCWTT	4C (76)	04 - B
File Control I/O Time Count	T6EFCWTC	50 (80)	02 - B
File Control String Wait	T6EXFSTR	23F (575)	01 - C
File Control String Wait Count	T6EVSTWC	86 (134)	02 - B
File Control String Wait Time	T6EVSTW	82 (130)	04 - B
Record-Level Sharing (RLS) SRB CPU Count	T6ERLSCC	452 (1106)	02 - B
RLS SRB CPU Time	T6ERLSCT	44E (1102)	04 - B
RLS Wait Count	T6ERLSWC	44C (1100)	02 - B
RLS Wait Time	T6ERLSWT	448 (1096)	04 - B
Temporary Storage			
Auxiliary Temporary Storage PUT Count	T6ETSPAC	116 (278)	04 - B
Temporary Storage Buffer Exception	T6EXTBUF	229 (553)	01 - C
Temporary Storage Count	T6ETSWTC	62 (98)	02 - B
Temporary Storage Exception Indicator	T6EXTEMP	228 (552)	01 - C
Temporary Storage GET Count	T6ETSGC	112 (274)	04 - B
Temporary Storage PUT MAIN Count	T6ETSPMC	11A (282)	04 - B
Temporary Storage Requests	T6ETSTC	302 (770)	04 - B
Temporary Storage Shared Wait Count	T6ETSSWC	458 (1112)	02 - B
Temporary Storage Shared Wait Time	T6ETSSWT	454 (1108)	04 - B
Temporary Storage String Exception	T6EXTSTR	22A (554)	01 - C

Table 11. Type 6D or 6E Transaction Detail Record Fields by Function (Continued)

Field Description	Field Name	Offset HEX (DEC)	Length (DEC) - Type
Temporary Storage String Wait Count	T6ETSWC	80 (128)	02 - B
Temporary Storage String Wait Time	T6ETSW	7C (124)	04 - B
Temporary Storage Time	T6ETSWT	5E (94)	04 - B
Program Control			
Program Control Link Count	T6EPCLIC	122 (290)	04 - B
Program Control Transfer Control Count	T6EPCXC	126 (294)	04 - B
Program Control Load Count	T6EPCLOC	12A (298)	04 - B
Program Link URM Requests	T6EPCLUC	3F8 (1016)	04 - B
Transient Data			
Transaction ID	T6ETRID	1C (28)	04 - C
Transient Data GET Count	T6ETDGC	106 (262)	04 - B
Transient Data PURGE Count	T6ETDRC	10E (270)	04 - B
Transient Data PUT Count	T6ETDPC	10A (266)	04 - B
Transient Data Requests	T6ETDTC	2FE (766)	04 -B
Transient Data Wait Count	T6ETDWTC	74 (116)	02 - B
Transient Data Wait Time	T6ETDWT	70 (112)	04 - B
CICS Data			
CICS Application ID	T6EAPLID	274 (628)	08 - C
Foundation Class Requests	T6EAPICT	602 (1538)	04 - B
MVS WLM Report Class Name	T6ERPTCL	432 (1074)	08 - C
MVS WLM Service Class Name	T6ESRVCL	42A (1066)	08 - C
Number of Performance Records	T6ERECCT	47E (1150)	04 - B
Performance Record Type: C = Terminal Converse S = Sync Point D = User Emp Deliver T = Task Termination F = Long Running Transaction	T6ERTYPE	3AA (938)	02 - C
Remote CICS SYSID	T6ERSYS	322 (802)	04 - C

Table 11. Type 6D or 6E Transaction Detail Record Fields by Function (Continued)

Field Description	Field Name	Offset HEX (DEC)	Length (DEC) - Type
Basic Mapping Support (BMS)			
In Requests	T6EBMIC	2F2 (754)	04 - B
Map Requests	T6EBMMC	2EE (750)	04 - B
Out Requests	T6EBMOC	2F6 (758)	04 - B
Total Requests	T6EBMTC	2FA (762)	04 - B
Front-End Programming Interface (FEPI)			
Characters Received	T6ESZCIN	362 (866)	04 - B
Characters Sent	T6ESZCOT	35E (862)	04 - B
Conversations Allocated	T6ESZACT	34E (846)	04 - B
Receive/Converse Count	T6ESZRCT	352 (850)	04 - B
Send/Converse Count	T6ESZSCT	356 (854)	04 - B
Start Count	T6ESZTCT	35A (858)	04 - B
Timeouts for Allocate	T6ESZATO	36C (876)	04 - B
Timeouts for Receive	T6ESZRTO	370 (880)	04 - B
Total Requests	T6ESZTOT	374 (884)	04 - B
Wait Count	T6ESZWTC	36A (874)	02 - B
Wait Time	T6ESZWWT	366 (870)	04 - B
CICS Business Transaction Service (CBTS)			
Acquire Requests	T6EBTACQ	5DE (1502)	04 - B
Activity Data Container Requests	T6EADCCT	5EA (1514)	04 - B
Activity ID	T6EACTID	576 (1398(	52 - C
Activity Name	T6EACTNM	5AA (1450)	16 - C
Activity Process Requests	T6EBTDFA	5CA (1482)	04 - B
Asynchronous Run Requests	T6EBTASY	5BE (1470)	04 - B
Define Input Event Requests	T6EBTDIE	5F6 (1526)	04 - B
Define Process Requests	T6EBTDFP	5C6 (1478)	04 - B
Delete Requests	T6EBTDEL	5DA (1498)	04 - B
Link Requests	T6EBTLNK	5C2 (1474)	04 - B
Process Data Container Requests	T6EPDCCT	5E6 (1510)	04 - B
Process Name	T6EPRCSN	516 (1302)	36 - C

Table 11. Type 6D or 6E Transaction Detail Record Fields by Function (Continued)

Field Description	Field Name	Offset HEX (DEC)	Length (DEC) - Type
Process Type	T6EPRCST	53A (1338)	08 - C
Reset Requests	T6EBTRES	5CE (1486)	04 - B
Resume Requests	T6EBTRSM	5D6 (1494)	04 - B
Retrieve/Reattach Event Requests	T6EBTRRE	5F2 (1522)	04 - B
Root Activity ID	T6EPRCSD	542 (1346)	52 - C
Suspend Requests	T6EBTSUP	5D2 (1490)	04 - B
Synchronous Run Requests	T6EBTSYN	5BA (1466)	04 - B
Timer Event Requests	T6EBTTME	5FA (1530)	04 - B
Total Data Container Requests	T6ETLCCT	5EE (1518)	04 - B
Total Event Requests	T6EBTTEV	5FE (1534)	04 - B
Total Requests	T6EBTTLR	5E2 (1506)	04 - B
Socket Layer			
Client IP Address	T6ESIPAD	632 (1586)	16 - C
Socket Bytes Decrypted	T6ESBDCT	62E (1582)	04 - B
Socket Bytes Encrypted	T6ESBECT	62A (1578)	04 - B
Socket I/O Wait Count	T6ESIOWC	4D2 (1234)	02 - B
Socket I/O Wait Time	T6ESIOWT	4CE (1230)	04 - B
Document Handler			
Document Header Create Requests	T6EDHCCT	60E (1550)	04 - B
Document Header Insert Requests	T6EDHICT	612 (1554)	04 - B
Document Header Retrieve Requests	T6EDHRCT	61A (1562)	04 - B
Document Header Set Requests	T6EDHSCT	616 (1558)	04 - B
Document Header Total Requests	T6EDHTCT	61E (1566)	04 - B
Total Length of Documents	T6EDHTLN	622 (1570)	04 - B
Web Interface			
Total Web Characters Received	T6EWBCHI	65E (1630)	04 - B
Total Web Characters Sent	T6EWBCHO	666 (1638)	04 - B
Total Web Requests	T6EWBTCT	66A (1642)	04 - B
Web Receive Requests	T6EWBRCT	65A (1626)	04 - B
Web Send Requests	T6EWBSCT	662 (1634)	04 - B

Table 11. Type 6D or 6E Transaction Detail Record Fields by Function (Continued)

Field Description	Field Name	Offset HEX (DEC)	Length (DEC) - Type
Web Repository Reads	T6EWBRRD	66E (1646)	04 - B
Web Repository Writes	T6EWBRWR	672 (1650)	04 - B

Appendix C. CMRSTATS: Operational Statistics Records

PERFORMANCE REPORTER constructs reports from the CICS operational statistics that MAINVIEW for CICS collects from CICS regions. Operational statistics are stored as records in the CMRSTATS data set. PERFORMANCE REPORTER uses BBPLIB member CMRSTATS as the data dictionary to reformat these records for PRL reports.

This appendix describes the format of CMRSTATS records in the following tables:

Field Prefix	Record Name and Type	Page
DSA	Storage Manager DSA - Type 02	209
DSP	Storage Manager Domain Subpool - Type 05	211
DST	Storage Manager Task Subpool - Type 06	212
TRG	Transaction Manager Global - Type 0A	213
TRN	Transaction Manager Transaction - Type 0B	214
TCL	Transaction Manager Transaction Class - Type 0C	215
FPP	FEPI Pool - Type 10	216
FPC	FEPI Connection - Type 11	217
FPT	FEPI Target - Type 12	218
VTM	VTAM Statistics - Type 15	219
PAI	Program Autoinstall - Type 17	219
TAI	Terminal Autoinstall - Type 18	220
LDR	Loader Resource - Type 19	221
DBC	DBCTL Unsolicited Statistics - Type 1C	222
LDG	Loader Global - Type 1E	223
DTB	Dynamic Transaction Backup - Type 21	224
TCT	Terminal Control - Type 22	225
LSR	LSR Pool - Type 27	226
LSF	LSR Pool File - Type 28	228
TDQ	Transient Data Queue Resource - Type 2A	229
TDG	Transient Data Queue Global - Type 2D	231
TMP	Temporary Storage Queue - Type 30	232
JRN	Journal Control - Type 31	234
ISC	ISC/IRC System Entry - Type 34	235
ISS	ISC Connection System Security - Type 36	237

Field Prefix	Record Name and Type	Page
DIS, DI4	Dispatcher - Types 37 and 3A	238
USG	User Domain - Type 3D	241
TBL	Table Manager - Type 3F	241
STA	Statistics - Type 42	241
FIL	File Control - Type 43	242
DLG	DL/I Global - Type 48	244
DL1	DL/I Resource - Type 49	245
IRB	IRC Batch - Type 4B	245
IRC	ISC/IRC Mode Entry - Type 4C	246
MN4	Monitoring Statistics - Type 50	247
MNG	Monitoring Statistics Global - Type 51	251
MNS	Monitoring Statistics Resource - Type 52	251
TDS	Transaction Dump Resource - Type 55	260
TDG	Transaction Dump Global - Type 57	260
SDS	System Dump Resource - Type 58	260
SDG	System Dump Global - Type 5A	261
LGR	Logger - Type 5D	261
LGS	Log Stream - Type 5E	262
EQG	Enqueue Manager - Type 61	263
RCV	Recovery Manager - Type 63	264
D2G	DB2 Connection - Type 66	265
D2S	DB2 Entry - Type 67	267
TCG	TCP/IP Services Global - Type 6B	268
TCP	TCP/IP Services Resource - Type 6C	269
RQM	Request Model - Type 6F	270
CRB	CORBA Server - Type 72	270
JVM	JVM Pool - Type 75	271
STI	System Initialization Table - Type C8	272
RCT	DB2 Plan Activity - Type C9	273
LTI, LTX	Service Level Response -Type CA	274

Field Prefix	Record Name and Type	Page
DSN	VSAM DSN - Type CB	276
T6F	Global Performance - Type CC	278
DLZ	DL/I - Type CD	280

Data Storage Layout

Table 12 describes the storage of CICS operational statistics by PERFORMANCE REPORTER for PRL, COBOL, and SAS reports. The type keys in the table represent

- Type of data stored on the CMRSTATS data set

   The tables in this appendix identify the type of data stored in a record field by these keys.

- Data type key specified in the CMRSTATS member of the BBPLIB data dictionary

   PERFORMANCE REPORTER uses this key to identify the user-selected (using PRL) fields from the collected records.

Table 12. CMRSTATS Data Storage Layout

Type	Recorded Data Format	Description	Type	Data Dictionary Format
B		Binary	B	
B		Clock (recorded in binary, converted to decimal, then divided by 62,500 for *ss.sss*)	K	*ss.sss*
C		Character	C	
M	*mmmm*	Store Clock Time (in milliseconds)	M	*m.mmm*
P		Packed	P	
S	*mmddyy hhmmss*	Store Clock Date and Time	S	*mm/dd/yyyy hh:mm:ss*
X		Hexadecimal	X	

where the following variables represent numeric values:

m.mmm = milliseconds
mm = month
dd = day
yy = year
hh = hours
mm = minutes
ss = seconds

Record Header Information

Each CMRSTATS record has a header area that identifies the data source, the type of record, and when it was collected. Table 13 shows the layout of this header area. The header fields can be referenced by their names.

Table 13. CMRSTATS Record Header Fields

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
00 (00)	CMR$SYS	08 - C	CICS System ID
08 (08)	CMRDATE	04 - X	Date of data creation. The date is recorded in the form YYYYMMDD.
0C (12)	CMRTIME	04 - P	Time of data creation. Time is recorded as HHMMSS using a 24-hour clock.
10 (16)	CMRCLOCK	08 - X	Time of data creation in hexadecimal format.
18 (24)	CMRRECID	03 - P	Three-byte packed record ID assigned by MAINVIEW for CICS.
1B (27)	TYPE	01 - X	Record Identifier

Record Formats

MAINVIEW for CICS maintains CICS operational statistics in the SMF data sets. Global Performance records are written at 5-minute intervals. Other statistical records are written according to the parameters specified in the CMRSOPT table. The CMRSTATS conversion routine reads the SMF files and builds equivalent records in the CMRSTATS file.

MAINVIEW for CICS uses the CICS SVC to write standard SMF 110 statistic records with a subtype of 0002. In addition, MAINVIEW for CICS writes SMF 110 records with a 0B02 subtype for statistic IDs of 200-205. The statistic ID values and their corresponding record types in the CMRSTATS file after running CMRSTATS are as follows:

Statistic ID	Record
200	Type C8 - System Initialization Table
201	Type C9 - DB2 Plan Activity
202	Type CA - Service Level Response
203	Type CB - VSAM
204	Type CC - Global Performance (formerly Type 6F)
205	Type CD - DL/I

Storage Manager DSA Record (DSA - Type 02)

For field names that end with *nnn* (such as DSADN*nnn*), data is available for a specific dynamic storage area, as follows:

001	CDSA
002	UDSA
003	SDSA
004	RDSA
005	ECDSA
006	EUDSA
007	ESDSA
008	ERDSA

Table 14. Storage Manager DSA Records: Type 02

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	DSANPAGP	02 - B	Number of Page Pools
1E (30)	DSASTGPR	01 - X	State of STGPROT
1F (31)	DSARENTP	01 - X	State of RENTPGM
20 (32)	DSATRANI	01 - X	State of TRANISO
24 (36)	DSAUSSCR	04 - B	Current Number of Unique Subspace Users
28 (40)	DSAUSSCM	04 - B	Cumulative Number of Unique Subspace Users
2C (44)	DSAUSSHW	04 - B	HWM of Unique Subspace Users
30 (48)	DSACSSCR	04 - B	Current Number of Common Subspace Users
34 (52)	DSACSSCM	04 - B	Cumulative Number of Common Subspace Users
38 (56)	DSACSSHW	04 - B	HWM of Common Subspace Users
3C (60)	DSADSALI	04 - B	Current DSA Limit
40 (64)	DSAEDSAL	04 - B	Current EDSA Limit
44 (68)	DSADSATO	04 - B	Current DSA Total
48 (72)	DSAEDSAT	04 - B	Current EDSA Total
4C (76)	DSAHWMDS	04 - B	HWM DSA Total
50 (80)	DSAHWMED	04 - B	HWM EDSA Total
54 (84)		24	Reserved for Future Use
6C (108)	DSADN*nnn*	08 - C	DSA Name
74 (116)	DSALC*nnn*	01 - X	Location - Below/Above
75 (117)	DSAAC*nnn*	01 - X	Access
76 (118)	DSAIN*nnn*	01 - X	DSA Index

Table 14. Storage Manager DSA Records: Type 02 (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
77 (119)		01	Reserved for Future Use
78 (120)	DSASZ*nnn*	04 - B	Current Size of DSA
7C (124)	DSAHZ*nnn*	04 - B	HWM Size of DSA
80 (128)	DSACZ*nnn*	04 - B	Current Cushion Size
84 (132)	DSAGM*nnn*	04 - B	Number of GETMAIN Requests
88 (136)	DSAFM*nnn*	04 - B	Number of FREEMAIN Requests
8C (140)	DSAAS*nnn*	04 - B	Number of Add Subpool Requests
90 (144)	DSADS*nnn*	04 - B	Number of Delete Subpool Requests
94 (148)	DSACR*nnn*	04 - B	Conditional Requests Returning Insufficient Storage
98 (152)	DSAUC*nnn*	04 - B	Unconditional Requests Suspended
9C (156)	DSACS*nnn*	04 - B	Current Requests Suspended for Storage
A0 (160)	DSAHS*nnn*	04 - B	HWM Requests Suspended for Storage
A4 (164)	DSAPW*nnn*	04 - B	Number of Tasks Purged, Waiting
A8 (168)	DSACH*nnn*	04 - B	Number of Cushion Releases
AC (172)	DSASS*nnn*	04 - B	Times SOS Occurred
B4 (180)	DSATS*nnn*	08 - X	Total Time SOS
BC (188)	DSACP*nnn*	04 - B	Current Number of Subpools
C0 (192)	DSAFS*nnn*	04 - B	Free Storage (including cushion)
C4 (196)	DSAHF*nnn*	04 - B	HWM Free Storage (including cushion)
C8 (200)	DSALF*nnn*	04 - B	LWM Free Storage (including cushion)
CC (204)	DSALA*nnn*	04 - B	Largest Free Area in DSA
D0 (208)	DSASV*nnn*	04 - B	Number of Storage Violations
D4 (212)	DSACX*nnn*	04 - B	Current Number of Extents
D8 (216)	DSAAX*nnn*	04 - B	Number of Extents Added
DC (220)	DSARX*nnn*	04 - B	Number of Extents Released
E0 (224)			End of Record

Storage Manager Domain Subpool Record (DSP - Type 05)

Table 15. Storage Manager Domain Subpool Records: Type 05

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	DSPDSPN	08 - C	Subpool Name
24 (36)	DSPDSAN	08 - C	DSA Name
2C (44)	DSPETYPE	01 - X	Element Type - Fixed/Variable
2D (45)		03	Reserved for Future Use
30 (48)	DSPFLEN	04 - B	Length (if fixed)
34 (52)		04	Reserved for Future Use
38 (56)	DSPDBDRY	04 - B	Boundary
3C (60)	DSPLOCN	01 - X	Above/Below 16 MB line
3D (61)	DSPACCES	01 - X	Access
3E (62)	DSPDSAIN	01 - X	DSA Index
3F (63)		01	Reserved for Future Use
40 (64)	DSPIFREE	04 - B	Initial Free Value
44 (68)	DSPGMREQ	04 - B	Number of GETMAIN Requests
48 (72)	DSPFMREQ	04 - B	Number of FREEMAIN Requests
4C (76)	DSPCES	04 - B	Sum of all Element Lengths
50 (80)	DSPCPS	04 - B	Current Page Storage
54 (84)	DSPCELEM	04 - B	Current Number of Elements
58 (88)	DSPHWMPS	04 - B	High Water Mark Page Storage
5C (92)			End of Record

Storage Manager Task Subpool Record (DST - Type 06)

Table 16. Storage Manager Task Subpool Records: Type 06

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	DSTDSAN	08 - C	DSA Name
24 (36)	DSTLOCN	01 - X	Above/Below 16 MB line
25 (37)	DSTACCES	01 - X	Access
26 (38)	DSTDSAIN	01 - X	DSA Index
27 (39)		01	Reserved for Future Use
28 (40)	DSTGMREQ	04 - B	Number of GETMAIN Requests
2C (44)	DSTFMREQ	04 - B	Number of FREEMAIN Requests
30 (48)	DSTCES	04 - B	Sum of all Element Lengths
34 (52)	DSTCPS	04 - B	Current Page Storage
38 (56)	DSTCNE	04 - B	Current Number of Elements
3C (60)	DSTHWMPS	04 - B	High Water Mark Page Storage
40 (64)			End of Record

Transaction Manager Global Record (TRG - Type 0A)

Table 17. Transaction Manager Global Records: Type 0A

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	TRGNUM	04 - B	Number of Transactions (User and System)
20 (32)	TRGMXT	04 - B	Current MAXTASK Value
24 (36)	TRGCAT	04 - B	Current Active User Transactions
28 (40)	TRGCQT	04 - B	Current Queued User Transactions
2C (44)	TRGTAMXT	04 - B	Times at MAXTASK
30 (48)	TRGPAT	04 - B	Peak Active User Transactions
34 (52)	TRGPQT	04 - B	Peak Queued User Transactions
38 (56)	TRGTAT	04 - B	Total Active User Transactions
3C (60)	TRGTDT	04 - B	Total Delayed User Transactions
40 (64)	TRGTQTME	08 - M	Total Time Spent Waiting for MXT
48 (72)	TRGCQTME	08 - M	Total Time Spent Current MXT
54 (84)	TRGTNUM	08 - X	Total Number of Transactions
5C (92)			End of Record

Transaction Manager Transaction Record (TRN - Type 0B)

Table 18. Transaction Manager Transaction Records: Type 0B

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	TRNTI	04 - C	Transaction ID
20 (32)	TRNPN	08 - C	Program Name
28 (40)	TRNTCL	08 - C	TCLASS name
30 (48)	TRNRNAM	08 - C	Remote Transaction ID
38 (56)	TRNRSYS	04 - C	Remote System ID
3C (60)	TRNPRTY	02 - B	Transaction Priority
3E (62)	TRNDYN	01 - C	Dynamic Indicator
3F (63)		01	Reserved for Future Use
40 (64)	TRNAC	04 - B	Attach Count
44 (68)	TRNRC	04 - B	Restart Count
48 (72)	TRNDLC	04 - B	Dynamic Local Count
4C (76)	TRNDRC	04 - B	Dynamic Remote Count
50 (80)	TRNRSC	04 - B	Remote Start Count
54 (84)	TRNSVC	04 - B	Storage Violation Count
58 (88)	TRNITOV	04 - B	Indoubt Timeout Value (minutes)
5C (92)	TRNIWTOP	01 - C	Indoubt Wait Option
5D (93)	TRNIACTN	01 - C	Indoubt Action - Commit/Backout
5E (94)		02	Reserved for Future Use
60 (96)	TRNIWAIT	04 - B	Number of Indoubt Waits
64 (100)	TRNFATXN	04 - B	Forced Action Due to Trandef
68 (104)	TRNFAIT	04 - B	Forced Action Due to Indoubt Timeout
6C (108)	TRNFANW	04 - B	Forced Action Due to No Wait Ability
70 (112)	TRNFAOP	04 - B	Forced Action Due to Operator
74 (116)	TRNFAOT	04 - B	Forced Action Due to Other
78 (120)	TRNAMISM	04 - B	Number of Action Mismatches
7C (124)			End of Record

Transaction Manager Transaction Class Record (TCL - Type 0C)

Table 19. Transaction Manager Transaction Class Records: Type 0C

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	TCLTCL	08 - C	TCLASS Name
24 (36)	TCLTAT	04 - B	Total Attach Requests for Transactions
28 (40)	TCLPI	04 - B	Transactions Purged Immediately
2C (44)	TCLTQ	04 - B	Transactions that had to Queue but are No Longer Queued
30 (48)	TCLAI	04 - B	Transactions Accepted Immediately
34 (52)	TCLAAQ	04 - B	Transactions Accepted After Queuing
38 (56)	TCLPWQ	04 - B	Transactions Purged While Queuing
3C (60)	TCLMXT	04 - B	Maximum Number of Transactions Allowed
40 (64)	TCLTH	04 - B	Purge Threshold
44 (68)	TCLITD	04 - B	Installed Transaction Definitions in this TCLASS
48 (72)	TCLPAT	04 - B	Peak Active User Transactions
4C (76)	TCLPQT	04 - B	Peak Queued User Transactions
50 (80)	TCLTAMA	04 - B	Times at Max Active
54 (84)	TCLTAPT	04 - B	Times at Purge Threshold
58 (88)	TCLCAT	04 - B	Current Active User Transactions
5C (92)	TCLCQT	04 - B	Current Queued User Transactions
60 (96)	TCLTQTME	08 - M	Total Queuing Time of those Transactions that are No Longer Queuing
68 (104)	TCLCQTME	08 - M	Total Queuing Time of those Transactions that are Still Queuing
70 (112)			End of Record

FEPI Pool Record (FPP - Type 10)

Table 20. FEPI Pool Records: Type 10

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	FPPPOOL	08 - C	Pool Name
24 (36)	FPPTRGCT	04 - B	Number of Targets
28 (40)	FPPNDCT	04 - B	Number of Nodes
2C (44)	FPPCONCT	04 - B	Number of Connections
30 (48)	FPPCONPK	04 - B	Peak Number of Connections
34 (52)	FPPALLOC	04 - B	Number of Conversation Allocates
38 (56)	FPPPKALL	04 - B	Peak Number of Concurrent Allocates
3C (60)	FPPWAIT	04 - B	Current Number of Allocates Waiting
40 (64)	FPPTOTWT	04 - B	Total Number of Allocates Forced to Wait
44 (68)	FPPPKWT	04 - B	Peak Number of Allocates Waiting
48 (72)	FPPTIOUT	04 - B	Number of Allocates that Timed Out
4C (76)			End of Record

FEPI Connection Record (FPC - Type 11)

Table 21. FEPI Connection Records: Type 11

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	FPCPOOL	08 - C	Key for Count Buckets
24 (36)	FPCTARG	08 - C	Target Name
2C (44)	FPCNODE	08 - C	Node Name
34 (52)	FPCACQ	04 - B	Number of Acquires for Connection
38 (56)	FPCCNV	04 - B	Number of Conversations
3C (60)	FPCUSI	04 - B	Number of Unsolicited Inputs Received
40 (64)	FPCCHOUT	04 - B	Number of Characters Sent on Connection
44 (68)	FPCCHIN	04 - B	Number of Characters Received on Connection
48 (72)	FPCRTOUT	04 - B	Number of Receive Timeouts
4C (76)	FPCERROR	04 - B	Number of Error Conditions
50 (80)			End of Record

FEPI Target Record (FPT - Type 12)

Table 22. FEPI Target Records: Type 12

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	FPTTARG	08 - C	Key for Count Buckets
24 (36)	FPTPOOL	08 - C	Pool Name
2C (44)	FPTAPPL	08 - C	Application ID (APPLID)
34 (52)	FPTNDCT	04 - B	Number of Nodes
38 (56)	FPTALLOC	04 - B	Number of Conversation Allocates
3C (60)	FPTTOTWT	04 - B	Total Number of Allocates Forced to Wait
40 (64)	FPTWAIT	04 - B	Current Number of Allocates Waiting
44 (68)	FPTPKWT	04 - B	Peak Number of Allocates Waiting
48 (72)	FPTTIOUT	04 - B	Number of Allocates that Timed Out
4C (76)			End of Record

VTAM Statistics Record (VTM - Type 15)

Table 23. VTAM Statistics Records: Type 15

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	VTMRPLXT	04 - B	Times at RPL Max
20 (32)	VTMRPLX	02 - B	Max RPLs Posted
22 (34)	VTMVTSOS	02 - B	VTAM Short on Storage (SOS)
24 (36)	VTMDOC	02 - B	Dynamic Open Count
26 (38)		02	Reserved for Future Use
28 (40)	VTMLUNUM	04 - B	Current LUs in Session
2C (44)	VTMLUHWM	04 - B	HWM LUs in Session
30 (48)	VTMPSIC	04 - B	PRSS Inquire Count
34 (52)	VTMPSNC	04 - B	PRSS NIB Count
38 (56)	VTMPSOC	04 - B	PRSS OPNDST Count
3C (60)	VTMPSUC	04 - B	PRSS Unbind Count
40 (64)	VTMPSEC	04 - B	PRSS Error Count
44 (68)			End of Record

Program Autoinstall Record (PAI - Type 17)

Table 24. Program Autoinstall Records: Type 17

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	PAIATT	04 - B	Number of Attempts
20 (32)	PAIREJ	04 - B	Number of Rejects
24 (36)	PAIFAIL	04 - B	Number of Failures
28 (40)			End of Record

Terminal Autoinstall Record (TAI - Type 18)

Table 25. Terminal Autoinstall Records: Type 18

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	TAIVADAT	02 - B	Total Attempts
1E (30)	TAIVADSH	02 - B	Times Set Logon Hold Issued
20 (32)	TAIVADRJ	04 - B	Total Rejected
24 (36)	TAIVADLO	04 - B	Total Deleted
28 (40)	TAIVADPK	02 - B	Peak Concurrent Attempts
2A (42)	TAIVADPX	02 - B	Times Peak Reached
2C (44)	TAIVADQT	04 - B	Number of Queued Logons
30 (48)	TAIVADQK	02 - B	Peak Number of Queued Logons
32 (50)	TAIVADQX	02 - B	Number of Times Peak is Reached
34 (52)	TAIRDINT	04 - T	Shipped Delete Interval
38 (56)	TAIRDIDL	04 - T	Shipped Delete Idle Time
3C (60)	TAISKBLT	04 - B	Remote Terminals Built
40 (64)	TAISKINS	04 - B	Remote Terminals Installed
44 (68)	TAISKDEL	04 - B	Remote Terminals Deleted
48 (72)	TAITIEXP	04 - B	Times Interval Expired
4C (76)	TAIRDREC	04 - B	Number of Remdels Received
50 (80)	TAIRDISS	04 - B	Number of Remdels Issued
54 (84)	TAIRDDEL	04 - B	Number of Remdels Deletes
58 (88)	TAICIDCT	04 - B	Current Idle Count
5C (92)	TAICIDLE	08 - M	Current Idle Time
64 (100)	TAICMAXI	08 - M	Current Maximum Idle Time
6C (108)	TAITIDCT	04 - B	Total Idle Count
70 (112)	TAITIDLE	08 - M	Total Idle Time
78 (120)	TAITMAXI	08 - M	Maximum Idle Time
80 (128)			End of Record

Loader Resource Record (LDR - Type 19)

Table 26. Loader Resource Records: Type 19

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	LDRPGMNM	08 - C	Program Name
24 (36)	LDRTU	04 - B	Times Used Since Last Reset
28 (40)	LDRFC	04 - B	Fetch Count
2C (44)	LDRFT	04 - B	Total Time Taken for All Fetches
30 (48)	LDRRPLO	04 - B	Offset into RPL DD of Owning PDS
34 (52)	LDRTN	04 - B	Number of Times NEWCOPY Performed
38 (56)	LDRPSIZE	04 - B	Program Size
3C (60)	LDRRPC	04 - B	Times Removed by Program Compression
40 (64)	LDRLOCN	01 - X	Location of Current Copy
41 (65)			End of Record

DBCTL Unsolicited Statistics Record (DBC - Type 1C)

Table 27. DBCTL Unsolicited Statistics Records: Type 1C

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	DBCTSENO	04 - B	CICS-DBCTL Session Number
20 (32)	DBCTDBID	04 - C	DBCTL ID
24 (36)	DBCRSEN	08 - C	RSE Name
2C (44)	DBCCTIME	08 - S	Connect Time (GMT STCK)
34 (52)	DBCDTIME	08 - S	Disconnect time (GMT STCK)
3C (60)	DBCMITHD	02 - B	Minimum Number of Threads
3E (62)	DBCMATHD	02 - B	Maximum Number of Threads
40 (64)	DBCNOMIT	04 - B	Number of Times Minimum Threads Reached
44 (68)	DBCNOMAT	04 - B	Number of Times Maximum Threads Reached
48 (72)	DBCELMAX	08 - M	Elapsed Time at Maximum Threads
50 (80)	DBCHIWAT	04 - B	HWM of Number of Threads
54 (84)	DBCPSBSU	04 - B	Total Number of Successful PSB Schedules
58 (88)	DBCLCTIM	08 - S	Connect Time (Local STCK)
60 (96)	DBCLDTIM	08 - S	Disconnect Time (Local STCK)
68 (104)			End of Record

Loader Global Record (LDG - Type 1E)

For field names that end with *nnn* (such as LDGST*nnn*), data is available for a specific dynamic storage area, as follows:

001	CDSA
002	ECDSA
003	SDSA
004	ESDSA
005	RDSA
006	ERDSA

Table 28. Loader Global Records: Type 1E

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	LDGLLR	04 - B	Number of Library Load Requests
20 (32)	LDGLLT	04 - T	Total Time for All Loads
24 (36)	LDGPUSES	04 - B	Number of Program Uses
28 (40)	LDGWLR	04 - B	Number of Loader Requests Waiting
2C (44)	LDGWLRHW	04 - B	HWM of Waiting Loader Requests
30 (48)	LDGHWMT	04 - B	Times at HWM
34 (52)	LDGTTW	04 - T	Total Time Waiting
38 (56)	LDGDREBS	04 - B	Number of Library DEB Rebuilds
3C (60)	LDGWTDLR	04 - B	Number of Loader Requests that Waited
40 (64)		24	Reserved for Future Use
58 (88)	LDGST*nnn*	04 - B	Amount of Storage Occupied by NIU
5C (92)	LDGPR*nnn*	04 - B	Number of Programs on NIU Queue
60 (96)	LDGRE*nnn*	04 - B	Number of Programs Reclaimed from NIU Queue
64 (100)	LDGRC*nnn*	04 - B	Number of Programs Removed by DPS
68 (104)	LDGDP*nnn*	08 - M	Total Time on NIU Queue
70 (112)	LDGDX*nnn*	01 - B	DSA Index
71 (113)			End of Record

Dynamic Transaction Backup Record (DTB - Type 21)

This record is available only for CICS systems running CICS/ESA version 4.1.

Table 29. Dynamic Transaction Backup Records: Type 21

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	DTBDBLA	04 - B	Number of Records Logged by DTB
20 (32)	DTBDBSA	04 - B	Number of Records Spilled by DTB
24 (36)			End of Record

Terminal Control Record (TCT - Type 22)

Table 30. Terminal Control Records: Type 22

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	TCTTETI	04 - C	Terminal ID
20 (32)	TCTTETT	01 - X	Terminal Type (TCTTTET)
21 (33)	TCTEAMIB	01 - X	Access Method (TCTEAMIB)
22 (34)		02	Reserved for Future Use
24 (36)	TCTLENP	04 - B	Number of Polls
28 (40)	TCTTENI	04 - B	Input Messages
2C (44)	TCTTENO	04 - B	Output Messages
30 (48)	TCTTEOT	04 - B	Number of Transactions
34 (52)	TCTCSVC	04 - B	Storage Violations
38 (56)	TCTTETE	04 - B	Transmission Errors
3C (60)	TCTTEOE	04 - B	Transaction Errors
40 (64)	TCTTCNT	04 - B	Pipeline Messages - Total
44 (68)	TCTSCNT	04 - B	Pipeline Messages - Groups
48 (72)	TCTMCNT	02 - B	Pipeline Messages - Max Consecutive
4A (74)		02	Reserved for Future Use
4C (76)	TCTLUNAM	08 - C	LU Name
54 (84)	TCTPRTY	01- C	Terminal Priority
55 (85)		03	Reserved for Future Use
58 (88)	TCTSTG	04 - B	TIOA Storage
5C (92)	TCTSYSID	04 - C	Owning SYSID of Terminal/Session
60 (96)	TCTONTM	08 - S	Autoinstall Logon Time (Local STCK)
68 (104)	TCTOFFTM	08 - S	Autoinstall Logoff Time (Local STCK)
70 (112)	TCTGONTM	08 - S	Autoinstall Logon Time (GMT STCK)
78 (120)	TCTGOFTM	08 - S	Autoinstall Logoff Time (GMT STCK)
80 (128)			End of Record

LSR Pool Record (LSR - Type 27)

For field names that end with *nnn* (such as LSRBZ*nnn*), data is available as follows:

001 - 011   when index and data buffers are shared
001 - 022   when separate index and data buffers are used

Table 31. LSR Pool Records: Type 27

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	LSRSRPID	01 - B	LSR Pool Number
1D (29)	LSRFLAGS	01 - X	Flags
1E (30)		02	Reserved for Future Use
20 (32)	LSRLBKCD	08 - S	Time Pool Created (Local STCK)
28 (40)	LSRLBKDD	08 - S	Time Pool Deleted (Local STCK)
30 (48)	LSRGBKCD	08 - S	Time Pool Created (GMT STCK)
38 (56)	LSRGBKDD	08 - S	Time Pool Deleted (GMT STCK)
40 (64)	LSRBKKYL	02 - B	Maximum Key Length
42 (66)	LSRBKSTN	02 - B	Number of Strings
44 (68)	LSRBKHSW	02 - B	Peak Requests Waiting on String
46 (70)		02	Reserved for Future Use
48 (72)	LSRBKTSW	04 - B	Total Number of Requests Waiting on String
4C (76)	LSRBKHAS	02 - B	Peak Number of Concurrently Active FC Strings
4E (78)		02	Reserved for Future Use
50 (80)	LSRTDBFN	04 - B	Total Number of Data Buffers
54 (84)	LSRTDHBN	04 - B	Total Number of Data Hiperspace Buffers
58 (88)	LSRTDBFF	04 - B	Total Number of Successful Lookasides - Data
5C (92)	LSRTDFRD	04 - B	Total Number of Buffer Reads - Data
60 (96)	LSRTDUIW	04 - B	Total Number of User Initiated Writes - Data
64 (100)	LSRTDNUW	04 - B	Total Number of Non-User Initiated Writes - Data
68 (104)	LSRTDCRS	04 - B	Total Number of Successful CREADs - Data
6C (108)	LSRTDCWS	04 - B	Total Number of Successful CWRITEs - Data
70 (112)	LSRTDCRF	04 - B	Total Number of Failing CREADs - Data
74 (116)	LSRTDCWF	04 - B	Total Number of Failing CWRITEs - Data
78 (120)	LSRTIBFN	04 - B	Total Number of Index Buffers
7C (124)	LSRTIHBN	04 - B	Total Number of Index Hiperspace Buffers

Table 31. LSR Pool Records: Type 27 (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
80 (128)	LSRTIBFF	04 - B	Total Number of Successful Lookasides - Index
84 (132)	LSRTIFRD	04 - B	Total Number of Buffer Reads - Index
88 (136)	LSRTIUIW	04 - B	Total Number of User Initiated Writes - Index
8C (140)	LSRTINUW	04 - B	Total Number of Non-User Initiated Writes - Index
90 (144)	LSRTICRS	04 - B	Total Number of Successful CREADs - Index
94 (148)	LSRTICWS	04 - B	Total Number of Successful CWRITEs - Index
98 (152)	LSRTICRF	04 - B	Total Number of Failing CREADs - Index
9C (156)	LSRTICWF	04 - B	Total Number of Failing CWRITEs - Index
A0 (160)	LSRBZ*nnn*	02 - B	Buffer Size
A2 (162)	LSRBN*nnn*	02 - B	Number of Buffers
A4 (164)	LSRHB*nnn*	04 - B	Number of Hiperspace Buffers
A8 (168)	LSRLA*nnn*	04 - B	Number of Successful Lookasides
AC (172)	LSRBR*nnn*	04 - B	Number of Buffer Reads
B0 (176)	LSRUW*nnn*	04 - B	Number of User Initiated Writes
B4 (180)	LSRNW*nnn*	04 - B	Number of Non-User Initiated Writes
B8 (184)	LSRCR*nnn*	04 - B	Number of Successful CREADs
BC (188)	LSRCW*nnn*	04 - B	Number of Successful CWRITEs
C0 (192)	LSRFC*nnn*	04 - B	Number of Failing CREADs
C4 (196)	LSRFW*nnn*	04 - B	Number of Failing CWRITEs
C8 (200)			End of Record

LSR Pool File Record (LSF - Type 28)

Table 32. LSR Pool File Records: Type 28

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	LSFSRPID	02 - B	LSR Pool Number
1E (30)	LSFDSID	08 - C	File Name
26 (38)	LSFDBN	02 - B	Data Buffer Size
28 (40)	LSFIBN	02 - B	Index Buffer Size
2C (44)	LSFTBW	04 - B	Total Buffer Waits
30 (48)	LSFHBW	02 - B	Highest Buffer Waits
32 (50)			End of Record

Transient Data Queue Resource Record (TDQ - Type 2A)

The transient data queue (TDQ) resource record varies according to which version of CICS produces it. Table 33 shows the TDQ resource record that is available for CICS systems running CICS Transaction Server (CTS) version 1.1 or higher. Table 34 on page 230 shows the record that is available for CICS systems running CICS/ESA version 4.1.

Table 33. Transient Data Queue Resource Records: Type 2A (CTS 1.1 or higher)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	TDQQID	04 - C	Transient Data Queue (TDQ) ID
20 (32)	TDQQTYPE	01 - X	TDQ Destination Type
21 (33)		03	Reserved for Future Use
24 (36)	TDQWRITE	04 - B	Total Writes to Queue
28 (40)	TDQREAD	04 - B	Total Reads from Queue
2C (44)	TDQDELET	04 - B	Total Deletes of Queue
30 (48)	TDQTRIGL	02 - B	ATI Transaction ID Trigger Level
32 (50)	TDQRTYPE	01 - X	Recovery Type
33 (51)	TDQFTYPE	01 - X	ATI Facility Type
34 (52)	TDQFNAME	04 - C	ATI Facility Name
38 (56)	TDQWAIT	01 - X	Indoubt Waiting Supported
39 (57)	TDQWAITA	01 - X	Indoubt Action - Reject/Queue
3A (58)		02	Reserved for Future Use
3C (60)	TDQATRAN	04 - C	ATI Transaction ID
40 (64)	TDQTRIGN	04 - B	Number of Trigger Level Triggers
44 (68)	TDQCCIUS	04 - B	Current CIs in Use by this Queue
48 (72)	TDQPCIUS	04 - B	Peak CIs in Use by this Queue
4C (76)	TDQCNITM	04 - B	Current Number of Items in Queue
50 (80)	TDQRSYS	04 - C	Remote SYSID
54 (84)	TDQRQID	04 - C	Remote Queue ID
58 (88)	TDQIQID	04 - C	Indirect Queue ID
5C (92)	TDQIOTYP	01 - X	I/O Type - Input/Output/Readback
5D (93)		03	Reserved for Future Use
60 (96)	TDQDDNM	08 - C	DD Name of Extrapartition TDQ
68 (104)	TDQDSNNM	44 - C	Data Set Name of Extrapartition TDQ

Table 33. Transient Data Queue Resource Records: Type 2A (CTS 1.1 or higher) (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
94 (148)	TDQPDSMN	08 - C	PDS Member Name
9C (156)			End of Record

Table 34. Transient Data Queue Resource Records: Type 2A (CICS/ESA 4.1)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	TD4DEST	04 - C	Destination ID
20 (32)	TD4EO	04 - B	Number of Extrapartition Outputs
24 (36)	TD4IO	04 - B	Number of Intrapartition Outputs
28 (40)	TD4IR	04 - B	Number of Indirect Requests
2C (44)	TD4RR	04 - B	Number of Remote Requests
30 (48)	TD4TYPE	01 - C	Destination Type of Queue
31 (49)		03	Reserved for Future Use
34 (52)	TD4RQID	04 - C	Remote Queue ID
38 (56)	TD4RSID	04 - C	Remote System ID
3C (60)	TD4IDQN	04 - C	Indirect Destination Queue Name
40 (64)			End of Record

Transient Data Queue Global Record (TDG - Type 2D)

Table 35. Transient Data Queue Global Records: Type 2D

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	TDGANBFA	04 - B	Number of Buffers
20 (32)	TDGAMXIU	04 - B	Peak Containing Valid Data
24 (36)	TDGATNAL	04 - B	Times Buffer Accessed
28 (40)	TDGAMXAL	04 - B	Peak Concurrent Access
2C (44)	TDGATNWT	04 - B	Times Buffer Wait Occured
30 (48)	TDGAMXWT	04 - B	Peak Buffer Waits
34 (52)	TDGACISZ	04 - B	Control Interval Size
38 (56)	TDGANCIS	04 - B	Number of Control Intervals
3C (60)	TDGAMXCI	04 - B	Peak Number of Control Intervals Used
40 (64)	TDGANOSP	04 - B	Times NOSPACE Occurred
44 (68)	TDGACTPT	04 - B	Number of Writes to Data Set
48 (72)	TDGACTGT	04 - B	Number of Reads from Data Set
4C (76)	TDGACTFT	04 - B	Number of Formatting Writes
50 (80)	TDGACTIO	04 - B	Number of I/O Errors
54 (84)	TDGSNSTA	04 - B	Number of Strings
58 (88)	TDGSTNAL	04 - B	Times String Accessed
5C (92)	TDGSMXAL	04 - B	Peak Concurrent Accesses
60 (96)	TDGSTNWT	04 - B	Times String Wait Occurred
64 (100)	TDGSMXWT	04 - B	Peak String Waits
68 (104)	TDGACNAL	4 - B	Current Concurrent Buffer Access
6C (108)	TDGACNWT	04 - B	Current Buffer Waits
70 (112)	TDGACNIU	04 - B	Current Buffers Containing Valid Data
74 (116)	TDGSCNAL	04 - B	Current Concurrent String Access
78 (120)	TDGSCNWT	04 - B	Current String Waits
7C (124)	TDGACTCI	04 - B	Number of Control Intervals in Use
80 (128)			End of Record

Temporary Storage Queue Record (TMP - Type 30)

Table 36. Temporary Storage Queue Records: Type 30

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	TMPSTA5F	04 - B	PUT/PUTQ Main Storage Requests
20 (32)	TMPNMG	04 - B	GET/GETQ Main Storage Requests
24 (36)	TMPSTA6F	04 - B	Peak Storage for Temporary Storage
28 (40)	TMPSTA7F	04 - B	PUT/PUTQ Auxiliary Storage Requests
2C (44)	TMPNAG	04 - B	GET/GETQ Auxiliary Storage Requests
30 (48)	TMPQNUMH	04 - B	Peak Temporary Storage Names in Use
34 (52)	TMPQINH	04 - B	Entries in Longest Queue
38 (56)		04	Reserved for Future Use
3C (60)	TMPSTA3F	04 - B	Times Queue Created
40 (64)		04	Reserved for Future Use
44 (68)	TMPCSZ	04 - B	Control Interval Size
48 (72)	TMPSTABF	04 - B	Writes More than Control Interval
4C (76)	TMPNCI	04 - B	Control Intervals in Temporary Storage Data Set
50 (80)	TMPNCIAH	04 - B	Peak Control Intervals used
54 (84)	TMPSTA8F	04 - B	Times Auxiliary Storage Exhausted
58 (88)	TMPNBCA	02 - B	Number of Temporary Storage Buffers
5A (90)		02	Reserved for Future Use
5C (92)	TMPBWTN	04 - B	Number of Buffer Waits
60 (96)	TMPBUWTH	04 - B	Peak Users Waiting on Buffer
64 (100)	TMPTWTN	04 - B	Buffer Writes
68 (104)	TMPTWTNR	04 - B	Writes Force for Recovery
6C (108)	TMPTRDN	04 - B	Buffer Reads
70 (112)	TMPTWTNF	04 - B	Format Writes
74 (116)	TMPNVCA	02 - B	Number of Temporary Storage strings
76 (118)		02	Reserved for Future Use
78 (120)	TMPNVCAH	04 - B	Peak Strings in Use
7C (124)	TMPVWTN	04 - B	Times String Wait Occurred

Table 36. Temporary Storage Queue Records: Type 30 (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
80 (128)	TMPVUWTH	04 - B	Peak Users Waiting on String
84 (132)	TMPSTAAF	04 - B	I/O Errors on Temporary Storage Data Set
88 (136)	TMPSTA6A	04 - B	Current Storage for Temporary Storage
8C (140)	TMPSTA9F	04 - B	Number of Temporary Storage Compressions
90 (144)	TMPNCIA	04 - B	Current Control Intervals in Use
94 (148)	TMPVUWT	04 - B	Users Waiting on String
98 (152)	TMPBUWT	04 - B	Users Waiting on Buffer
9C (156)	TMPQNUM	04 - B	Temporary Storage Names in Use
A0 (160)	TMPLAR	04 - B	Longest Auxiliary Record Length
A4 (164)	TMPNAVB	04 - B	Number of Available Bytes per Control Interval
A8 (168)	TMPSPCI	04 - B	Segments per Control Interval
AC (172)	TMPBPSEG	04 - B	Bytes per Segment
B0 (176)	TMPSHPDF	04 - B	Shared Pools Defined
B4 (180)	TMPSHPCN	04 - B	Shared Pools Connected To
B8 (184)	TMPSHRDS	04 - B	Shared Read Requests
BC (188)	TMPSHWTS	04 - B	Shared Write Requests
C0 (192)			End of Record

Journal Control Record (JRN - Type 31)

This record is available only for CICS systems running CICS/ESA version 4.1.

Table 37. Journal Control Records: Type 31

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	JRNNAME	08 - C	Journal Name (DFHJ*xxxx*)
24 (36)	JRNJFID	01 - B	Journal ID
25 (37)	JRNLRC	04 - B	Number of Records Written
29 (41)	JRNPBC	04 - B	Number of Blocks Written
2D (45)	JRNBFC	04 - B	Times Buffer Full
31 (49)		01	Reserved for Future Use
32 (50)	JRNABS	04 - B	Average O/P Block Size
34 (52)	JRNLVW	06 - C	Last VOLSER Written
3A (58)	JRNVOOC	02 - B	Number of Tapes Opened
3C (60)	JRNSTL	02 - B	Number of Scratch Tapes Left
3E (62)	JRNASUB	02 - B	Number of Archives Submitted
40 (64)	JRNJDO	02 - B	Number of Journal Data Sets Opened
42 (66)	JRNWAC	02 - B	Number of Waits for Archive Completion
44 (68)	JRNTYPE	05 - C	Journal Type
4A (74)			End of Record

ISC/IRC System Entry Record (ISC - Type 34)

Table 38. ISC/IRC System Entry Records: Type 34

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	ISCCNTN	04 - C	Connection Name
20 (32)	ISCEALL	02 - B	AIDs in Chain
22 (34)	ISCESALL	02 - B	Generic AIDs in Chain
24 (36)	ISCEBID	02 - B	Current Bids
26 (38)	ISCESTAM	02 - B	Maximum Outstanding Allocates
28 (40)	ISCE2HWM	02 - B	Maximum Secondaries
2A (42)	ISCEBHWM	02 - B	Maximum Bids
2C (44)	ISCES1	04 - B	ATIs Satisfied by Primaries
30 (48)	ISCES2	04 - B	ATIs Satisfied by Secondaries
34 (52)	ISCESBID	04 - B	Bids Sent
38 (56)	ISCESTAS	04 - B	Total Allocates
3C (60)	ISCESTAQ	04 - B	Queued Allocates
40 (64)	ISCESTAF	04 - B	Failed - Link Allocates
44 (68)	ISCESTAO	04 - B	Failed - Other Reasons
48 (72)	ISCESTFC	04 - B	File Control Function Shipping Requests
4C (76)	ISCESTIC	04 - B	Interval Control Function Shipping Requests
50 (80)	ISCESTTD	04 - B	Transient Data Function Shipping Requests
54 (84)	ISCESTTS	04 - B	Temporary Storage Function Shipping Requests
58 (88)	ISCESTDL	04 - B	DL/I Function Shipping Requests
5C (92)	ISCESTTC	04 - B	Terminal Sharing Requests
60 (96)	ISCE1HWM	02 - B	Maximum Primaries
62 (98)	ISCEQPCT	02 - B	MAXQTIME Purge Count
64 (100)	ISCEALRJ	04 - B	Allocates Rejected (QLIMIT)
68 (104)	ISCEMXQT	02 - B	Maximum Queue Time
6A (106)	ISCEALIM	02 - B	Allocate Queue Limit
6C (108)	ISCEZQRJ	04 - B	XZIQUE Rejects
70 (112)	ISCEZQPU	02 - B	XZIQUE Purge Count

Table 38. ISC/IRC System Entry Records: Type 34 (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
72 (114)	ISCEZQPC	02 - B	XZIQUE Allocates Purged
74 (116)	ISCEMQPC	02 - B	MAXQTIME Allocates Purged
76 (118)		06	Reserved for Future Use
7C (124)	ISCGACT	08 - S	AI GMT Connect Create Time
84 (132)	ISCAICT	08 - S	AI Connect Create Time
8C (140)	ISCGADT	08 - S	AI GMT Connect Delete Time
94 (148)	ISCAIDT	08 - S	AI Connect Delete Time
9C (156)		04	Reserved for Future Use
A0 (160)	ISCESID	08 - C	Connection Netname
A8 (168)	ISCACCM	01 - X	Access method
A9 (169)	ISCEFLGS	01 - X	Protocol
AA (170)	ISCESECN	02 - B	Send Session Count
AC (172)	ISCEPRMN	02 - B	Receive Session Count
AE (174)	ISCE1RY	02 - B	Primaries Currently Used
B0 (176)	ISCE2RY	02 - B	Secondaries Currently Used
B2 (178)		02	Reserved for Future Use
B4 (180)	ISCESTPC	04 - B	Program Control Function Shipping Requests
B8 (184)			End of Record

ISC Connection System Security Record (ISS - Type 36)

Table 39. ISC Connection System Security Records: Type 36

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1E (30)	ISSDTIME	02 - B	Delay Time for LUIT Table
20 (32)		14	Reserved for Future Use
2C (44)	ISSTREUS	04 - B	Total Number of Entries reused in LUIT Table
30 (48)	ISSTTIME	04 - B	Total Number of Entries Timed Out in LUIT Table
34 (52)	ISSAREUS	04 - B	Average Reuse Time Between Entries in LUIT Table
38 (56)			End of Record

Dispatcher Record (Types 37 and 3A)

The dispatcher record varies according to which version of CICS produces it. Table 40 shows the dispatcher record that is available for CICS systems running CICS Transaction Server (CTS) version 1.3 or higher. Table 41 on page 240 shows the record that is available for CICS systems running CTS version 1.2 or below.

In Table 40, for field names that end with *nnn* (such as DISTN*nnn*), data is available as follows:

001 - 012   Up to 12 different TCB statistics areas; the actual number in use is provided in the DISASIZE field.

Table 40. Dispatcher Records: Type 37 (CTS 1.3 or higher)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	DISGLEN	02 - B	Global Statics Length
1E (30)	DISASIZE	02 - B	Number of DSGTCB DSECTs Supplied
20 (32)	DISICVT	04 - B	Dispatcher Global Statistics
24 (36)	DISICVSD	02 - B	Current ICVSD Time
26 (38)	DISCNT	02 - B	Current Number of Tasks
28 (40)	DISPNT	02 - B	Peak Number of Tasks
2A (42)		10	Reserved for Future Use
34 (52)	DISSTART	08 - S	GMT STCK Sub-Disp Start Time
3C (60)	DISLSTRT	08 - S	Local STCK Sub-Disp Start Time
44 (68)	DISEJST	08 - M	Elapsed Job Step Timing
4C (76)	DISSRBT	08 - M	Accumulated SRB Time
54 (84)	DISTOTWL	08 - M	Total Wait Time at TCB Limit
5C (92)	DISCURWT	08 - M	Current Waiting Time
64 (100)	DISTOTNW	04 - B	Total Number of Waits
68 (104)	DISCURNW	04 - B	Current Number of Tasks Waiting for a TCB
6C (108)	DISPEANW	04 - B	Peak Number of Tasks Waiting for a TCB
70 (112)	DISMAXOP	04 - B	Maximum Number of Open TCBs
74 (116)	DISCNUAT	04 - B	Current OM TCBs Attached
78 (120)	DISPNUAT	04 - B	Peak OM TCBs Attached
7C (124)	DISCNUUS	04 - B	Current OM TCBs in Use
80 (128)	DISPNUUS	04 - B	Peak OM TCBs Used
84 (132)	DISNTCBL	04 - B	Number of Times at TCB Limit

Table 40. Dispatcher Records: Type 37 (CTS 1.3 or higher) (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
88 (136)	DISICVRT	04 - B	Current ICVR Time
8C (140)	DISPRIAG	02 - B	Priority Aging
8E (142)		02	Reserved for Future Use
90 (144)	DISXSCNS	04 - B	Number of Excess TCB Scans
94 (148)	DISXSCNN	04 - B	Number of Scans - No TCB Detached
98 (152)	DISXTCBD	04 - B	Total Number of Excess TCBs Detached
9C (156)		24	Reserved for Future Use
B4 (180)	DISTN*nnn*	02 - C	TCB Mode Name
B6 (182)	DISMD*nnn*	01 - X	TCB Mode
B8 (184)	DISNA*nnn*	04 - B	Number of TCBs Currently Attached
BC (188)	DISPA*nnn*	04 - B	Peak Number of TCBs Attached
C0 (192)	DISPX*nnn*	04 - B	Number of Partition Exits
C4 (196)	DISTA*nnn*	04 - B	Number of TCB Attaches
C8 (200)	DISDU*nnn*	04 - B	Number of TCB Detaches - Unclean
CC (204)	DISDS*nnn*	04 - B	Number of TCB Detaches - Stolen
D0 (208)	DISDO*nnn*	04 - B	Number of TCB Detaches - Other
D4 (212)	DISTS*nnn*	04 - B	Number of TCB Steals
D8 (216)	DISCT*nnn*	04 - B	Current TCBs Used by Mode
DC (220)	DISPU*nnn*	04 - B	Peak TCBs Used by Mode
E0 (224)	DISTE*nnn*	04 - B	Number of TCB Detaches - Excess
E4 (228)		08	Reserved for Future Use
EC (236)	DISOW*nnn*	08 - M	Cumulative Real Time CICS in OS Wait
F4 (244)	DISDM*nnn*	08 - M	Cumulative Real Time TCB Dispatch by MVS
FC (252)	DISCD*nnn*	08 - M	Cumulative CPU Time for DS Task
104 (260)	DISTT*nnn*	08 - M	Cumulative CPU Time for TCB
10C (268)			End of Record

In Table 41, for field names that end with *nnn* (such as DI4TN*nnn*), data is available as follows:

001 - 005　　Up to 5 different TCB statistics areas; the actual number in use is provided in the DI4ASIZE field.

Table 41. Dispatcher Records: Type 3A (CTS 1.2 or below)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	DI4ICVT	04 - B	Current ICV Time
20 (32)	DI4ICVSD	02 - B	Current ICVSD Time
22 (34)		02	Reserved for Future Use
24 (36)	DI4CNT	02 - B	Current Number of Tasks
26 (38)	DI4PNT	02 - B	Peak Number of Tasks
28 (40)		22	Reserved for Future Use
3E (62)	DI4ASIZE	02 - B	Number of DISP4_TCB DSECTs Supplied
40 (64)	DI4F1*nnn*	01 - X	Flag Byte 1
41 (65)	DI4F2*nnn*	01 - X	Flag Byte 2 - Reserved
42 (66)	DI4F3*nnn*	01 - X	Flag Byte 3 - Reserved
43 (67)	DI4F4*nnn*	01 - X	Flag Byte 4 - Reserved
44 (68)	DI4TN*nnn*	08 - C	TCB Name
4C (76)	DI4PX*nnn*	04 - B	Number of Partition Exits
50 (80)	DI4PR*nnn*	04 - B	CPU Percent Usage
54 (84)	DI4OW*nnn*	08 - M	Cumulative Real Time CICS in OS Wait
5C (92)	DI4DM*nnn*	08 - M	Cumulative Real Time TCB Dispatch by MVS
64 (100)	DI4CD*nnn*	08 - M	Cumulative CPU Time for DS Task
6C (108)	DI4TT*nnn*	08 - M	Cumulative CPU Time for TCB
74 (116)	DI4GS*nnn*	08 - S	GMT STCK Sub-Disp Start Time
7C (124)	DI4LS*nnn*	08 - S	Local STCK Sub-Disp Start Time
84 (132)			End of Record

User Domain Record (USG - Type 3D)

Table 42. User Domain Records: Type 3D

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	USGTOMRT	04 - B	Timeout Mean Reuse Time
20 (32)	USGTORC	04 - B	Timeout Reuse Count
24 (36)	USGTOEC	04 - B	Timeout Expiry Count
28 (40)	USGDRRC	04 - B	Directory Reuse Count
2C (44)	USGDRNFC	04 - B	Directory not found count
30 (48)			End of Record

Table Manager Record (TBL - Type 3F)

In Table 43, the field names end with *nnn*, where *nnn* can be

001 - 017   For the 17 different table statistics entries.

Table 43. Table Manager Records: Type 3F

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	TBLTN*nnn*	04 - C	Stats for Each Table
20 (32)	TBLTS*nnn*	04 - B	Table Size
24 (36)			End of Record

Statistics Record (STA - Type 42)

Table 44. Statistics Records: Type 42

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	STANC	04 - B	Number of Collections
20 (32)	STASMFW	04 - B	Number of SMF Writes
24 (36)	STALDW	04 - B	Length of Data Written
28 (40)			End of Record

File Control Record (FIL - Type 43)

Table 45. File Control Records: Type 43

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	FILFNAM	08 - C	File Name
24 (36)	FILFLOC	01 - C	A value of R, if remote
25 (37)	FILDT	01 - C	A value of R, S , T, L, K or X
26 (38)	FILDSRLS	01 - C	RLS/Non-RLS Indicator
27 (39)		13	Reserved for Future Use
34 (52)	FILDSNAM	44 - C	Data Set Name
60 (96)	FILDSRD	04 - B	GET Requests
64 (100)	FILDSGU	04 - B	GET Update Requests
68 (104)	FILDSBR	04 - B	BROWSE Requests
6C (108)	FILDSWRA	04 - B	ADD Requests
70 (112)	FILDSWRU	04 - B	UPDATE Requests
74 (116)	FILDSDEL	04 - B	DELETE Requests
78 (120)	FILRMDEL	04 - B	Remote Deletes
7C (124)	FILDSXCP	04 - B	VSAM EXCP Requests - Data
80 (128)	FILDSIXP	04 - B	VSAM EXCP Requests - Index
84 (132)	FILDSTSW	04 - B	Wait on String Total
88 (136)	FILDSHSW	02 - B	Wait on String Highest
8A (138)		02	Reserved for Future Use
8C (140)	FILDTTYP	01 - C	A value of C, S, U, X, L or K
8D (141)		03	Reserved for Future Use
90 (144)	FILDTRDS	04 - B	Read/Browse Requests
94 (148)	FILDTRNF	04 - B	Source Reads Issued
98 (152)	FILDTAVR	04 - B	ADDs Resulting from READs
9C (156)	FILDTADS	04 - B	ADD Requests
A0 (160)	FILDTARJ	04 - B	ADDs Rejected by Exit
A4 (164)	FILDTATF	04 - B	ADDs when Table Full
A8 (168)	FILDTRWS	04 - B	REWRITE Requests

Table 45. File Control Records: Type 43 (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
AC (172)	FILDTDLS	04 - B	DELETE Requests
B0 (176)	FILDTSHI	04 - B	Highest Table Record Count
B4 (180)	FILDTSIZ	04 - B	Current Table Record Count
B8 (184)	FILDTALT	04 - B	Storage Allocated - Total (in KB)
BC (188)	FILDTUST	04 - B	Storage In Use - Total (in KB)
C0 (192)	FILDTALE	04 - B	Storage Allocated - Entries (in KB)
C4 (196)	FILDTUSE	04 - B	Storage In Use - Entries (in KB)
C8 (200)	FILDTALI	04 - B	Storage Allocated - Index (in KB)
CC (204)	FILDTUSI	04 - B	Storage In Use - Index (in KB)
D0 (208)	FILDTALD	04 - B	Storage Allocated - Data (in KB)
D4 (212)	FILDTUSD	04 - B	Storage In Use - Data (in KB)
D8 (216)	FILDTRRS	04 - B	Read Retries for an SDT
DC (220)	FILDSDNB	02 - B	Number of Buffers - Data
DE (222)	FILDSINB	02 - B	Number of Buffers - Index
E0 (224)	FILPOOL	01 - X	LSRPOOL ID
E2 (226)	FILSTRNO	02 - B	Number of Strings
E4 (228)	FILRNAME	08 - C	Remote Name
EC (236)	FILRSYS	04 - C	Remote System ID
F0 (240)	FILDSTYP	01 - C	Data Set Type
F1 (241)		03	Reserved for Future Use
F4 (244)	FILBDSNM	44 - C	Base Data Set Name
120 (288)	FILDSASC	02 - B	Number of Active Strings
122 (290)	FILDSASW	02 - B	Number of String Waits
124 (292)	FILLOPNT	08 - S	File Open Time (Local STCK)
12C (300)	FILLCLST	08 - S	File Close Time (Local STCK)
134 (308)	FILGOPNT	08 - S	File Open Time (GMT STCK)
13C (316)	FILGCLST	08 - S	File Close Time (GMT STCK)
144 (324)	FILDSBRU	04 - B	Browse for Update Count
148 (328)	FILRLSWT	04 - B	RLS Request Wait Timeouts
14C (332)	FILDTCON	04 - B	Number of CHANGED Responses

Table 45. File Control Records: Type 43 (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
150 (336)	FILDTCFP	08 - C	Coupling Facility Data Table
158 (344)	FILDTLDS	04 - B	Number of LOADING Responses
15C (348)			End of Record

DL/I Global Record (DLG - Type 48)

This record is available only for CICS systems running CICS/ESA version 4.1.

Table 46. DL/I Global Records: Type 48

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	DLGDMBMU	04 - B	DMB Pool Usage HWM
20 (32)	DLGDMBMS	04 - B	Maximum size of DMB Pool
24 (36)	DLGPSBMU	04 - B	PSB Pool Usage HWM
28 (40)	DLGPSBMS	04 - B	Maximum size of PSB Pool
2C (44)	DLGENQMU	04 - B	ENQ Pool Usage HWM
30 (48)	DLGENQMS	04 - B	Maximum size of ENQ Pool
34 (52)	DLGDMBEX	04 - B	Number of Waits for DMB Pool Space
38 (56)	DLGPSBEX	04 - B	Number of Waits for PSB Pool Space
3C (60)	DLGTHRDW	04 - B	Number of Waits for DL/I Threads
40 (64)	DLGTHRDM	02 - B	Peak Concurrent DL/I Threads
42 (66)	DLGTHRDS	02 - B	Maximum Number of Threads In Allowed
44 (68)	DLGTHRDA	02 - B	Active DL/I Threads
48 (70)			End of Record

DL/I Resource Record (DL1 - Type 49)

This record is available only for CICS systems running CICS/ESA version 4.1.

Table 47. DL/I Resource Records: Type 49

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	DL1FNAM	08 - C	DBD Name
24 (36)	DL1EGU	04 - B	GU Count
28 (40)	DL1EGN	04 - B	GN Count
2C (44)	DL1EGNP	04 - B	GNP Count
30 (48)	DL1EGHU	04 - B	GHU Count
34 (52)	DL1EGHN	04 - B	GHN Count
38 (56)	DL1EGHNP	04 - B	GHNP Count
3C (60)	DL1EISR	04 - B	ISRT Count
40 (64)	DL1EDLT	04 - B	DLET Count
44 (68)	DL1EREP	04 - B	REPL Count
48 (72)	DL1LTOT	04 - B	Line Totals
4C (76)	DL1IOTL	04 - B	Total Local EEQEs
50 (80)	DL1IORL	04 - B	Total Read EEQEs
54 (84)	DL1IOTG	04 - B	Total Global EEQEs
58 (88)	DL1IODR	04 - C	DBRC Register
5C (92)	DL1IMSVR	01 - X	IMS Version Flag
5E (94)			End of Record

IRC Batch Record (IRB - Type 4B)

This record is available only for CICS systems running CICS/ESA version 4.1.

Table 48. IRC Batch Records: Type 4B

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	IRBEMCTH	04 - B	Maximum Concurrent Batch Jobs Sharing Databases
20 (32)	IRBETOTH	02 - B	Total Batch Jobs Sharing Databases
22 (34)			End of Record

ISC/IRC Mode Entry Record (IRC - Type 4C)

Table 49. ISC/IRC Mode Entry Records: Type 4C

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	IRCSYSN	04 - C	System Name
20 (32)	IRCMODE	08 - C	Mode Name
28 (40)	IRCESTAM	02 - B	Maximum Outstanding Allocates
2A (42)	IRCE2HWM	02 - B	Maximum Secondaries
2C (44)	IRCEBHWM	02 - B	Maximum Bids
2E (46)	IRCE1HWM	02 - B	Peak Contention Losers
30 (48)	IRCES1	04 - B	ATIs Satisfied by Primaries
34 (52)	IRCES2	04 - B	ATIs Satisfied by Secondaries
38 (56)	IRCESBID	04 - B	Bids Sent
3C (60)	IRCESTAS	04 - B	Total Allocates
40 (64)	IRCESTAQ	04 - B	Queued Allocates
44 (68)	IRCESTAF	04 - B	Failed Link Allocates
48 (72)	IRCESTAO	04 - B	Failed - Other Reasons
4C (76)	IRCESTAG	04 - B	Generic Allocates
50 (80)	IRCESTAP	04 - B	Specific Allocates
54 (84)	IRCEBID	02 - B	Current Bids
56 (86)	IRCEQPCT	02 - B	XZIQUE Purge Count
58 (88)	IRCEZQPC	02 - B	XZIQUE Allocates Purged
5A (90)	IRCELMAX	02 - B	Maximum Session Count
5C (92)	IRCEMCON	02 - B	Maximum Contention Winners Acceptable
5E (94)	IRCEMAXS	02 - B	Current Maximum Session Count
60 (96)	IRCECONW	02 - B	Current CNOS Contention Winners
62 (98)	IRCECONL	02 - B	Current CNOS Contention Losers
64 (100)	IRCE1RY	02 - B	Primaries Currently Used
66 (102)	IRCE2RY	02 - B	Secondaries Currently Used
68 (104)			End of Record

Monitoring Statistics Record (MN4 - Type 50)

This record is available only for CICS systems running CICS/ESA version 4.1.

Table 50. Monitoring Statistics Records: Type 50

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	MN4TRID	04 - C	TRAN - Transaction ID
20 (32)	MN4TEID	04 - C	TERM - Terminal ID
24 (36)	MN4USID	08 - C	USERID - User ID
2C (44)	MN4TRTY	04 - C	TTYPE - Transaction Type
30 (48)	MN4ATTT	08 - S	START - Task Start Time
38 (56)	MN4DETT	08 - S	STOP - Task Stop Time
40 (64)	MN4TRSN	04 - C	TRANNUM - Transaction Sequence Number
44 (68)	MN4TPRI	04 - B	TRANPRI - Transaction Priority
48 (72)	MN4TCLSN	08 - C	TCLSNAME - Transaction Class Name
50 (80)	MN4LUNM	08 - C	LUNAME - VTAM Logical Unit Name
58 (88)	MN4PGNM	08 - C	PGMNAME - First Program Name
60 (96)	MN4NETNM	20 - C	NETNAME - Originating System Name
74 (116)	MN4UOWID	08 - C	UOWID - Unit-of-Work Name
7C (124)	MN4RSYS	04 - C	RSYSID - Remote SYSID Routed To
80 (128)	MN4ERROR	04 - X	TASKFLAG - Transaction Error Flags
84 (132)	MN4ABCDO	04 - C	ABCODEO - Original Transaction Abend Codes
88 (136)	MN4ABCDC	04 - C	ABCODEC - Current Transaction Abend Code
8C (140)	MN4TYPE	04 - C	RTYPE - Record Type
90 (144)	MN4PINMC	04 - B	TCMSGIN1 - Primary TC Messages In
94 (148)	MN4TCI1C	04 - B	TCCHRIN1 - Primary TC Characters In
98 (152)	MN4POUMC	04 - B	TCMSGOU1 - Primary TC Messages Out
9C (156)	MN4TCO1C	04 - B	TCCHROU1 - Primary TC Characters Out
A0 (160)	MN4SINMC	04 - B	TCMSGIN2 - Secondary TC Messages In
A4 (164)	MN4TCI2C	04 - B	TCCHRIN2 - Secondary TC Characters In
A8 (168)	MN4SOUMC	04 - B	TCMSGOU2 - Secondary TC Messages Out
AC (172)	MN4TCO2C	04 - B	TCCHROU2 - Secondary TC Characters Out
B0 (176)	MN462IMC	04 - B	TCM62IN2 - Secondary TC Messages for LU6.2. In

Table 50. Monitoring Statistics Records: Type 50 (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
B4 (180)	MN462ICH	04 - B	TCC62IN2 - Secondary TC Characters for LU6.2. In
B8 (184)	MN462OMC	04 - B	TCM62OU2 - Secondary TC Messages for LU6.2. Out
BC (188)	MN462OCH	04 - B	TCC62OU2 - Secondary TC Characters for LU6.2. Out
C0 (192)	MN4TAC	04 - B	TCALLOCT - Number of TCTTE Allocate Requests
C4 (196)	MN4SCUGB	04 - B	SCUGETCT - Number of User Storage GETMAINs Below Line
C8 (200)	MN4SCUGA	04 - B	Number of User Storage GETMAINs Above Line
CC (204)	MN4SCCGB	04 - B	SCCGETCT - Number of CDSA Storage GETMAINs Below Line
D0 (208)	MN4SCCGA	04 - B	Number of ECDSA Storage GETMAINs Above Line
D4 (212)	MN4USHWB	04 - B	SCUSRHWM - User Task Storage HWM Below Line
D8 (216)	MN4USHWA	04 - B	User Task Storage HWM Above Line
DC (220)	MN4CHWMB	04 - B	SC24CHWM - CDSA Storage HWM Below Line
E0 (224)	MN4CHWMA	04 - B	SC31CHWM - ECDSA Storage HWM Above Line
E4 (228)	MN4UTSOB	08 - X	SCUSRSTG - User Task Storage Occupancy Below Line
EC (236)	MN4UTSOA	08 - X	User Task Storage Occupancy Above Line
F4 (244)	MN4COCCB	08 - X	SC24COCC - CDSA Storage Occupancy Below Line
FC (252)	MN4COCCA	08 - X	SC31COCC - ECDSA Storage Occupancy Above Line
104 (260)	MN4PCUSE	04 - B	PCSTGHWM - Program Storage HWM
108 (264)	MN4PC31A	04 - B	PC31AHWM - Program Storage HWM Above Line
10C (268)	MN4PCUSB	04 - B	PC24BHWM - Program Storage HWM Below Line
110 (272)	MN4PCCAH	04 - B	PC31CHWM - ECDSA Program Storage HWM Above Line
114 (276)	MN4PCCBH	04 - B	PC24CHWM - CDSA Program Storage HWM Below Line
118 (280)	MN4PCRAH	04 - B	PC31RHWM - R/O Program Storage HWM Above Line
11C (284)	MN4PCRBH	04 - B	PC24RHWM - R/O Program Storage HWM Below Line
120 (288)	MN4PCSAH	04 - B	PC31SHWM - Shared Program Storage HWM Above Line
124 (292)	MN4PCSBH	04 - B	PC24SHWM - Shared Program Storage HWM Below Line
128 (296)	MN4FCGC	04 - B	FCGETCT - Number of File GETs
12C (300)	MN4FCPC	04 - B	FCPUTCT - Number of File PUTs
130 (304)	MN4FCBC	04 - B	FCBRWCT - Number of File Browses
134 (308)	MN4FCAC	04 - B	FCADDCT - Number of File Adds
138 (312)	MN4FCDC	04 - B	FCDELCT - Number of File Deletes

Table 50. Monitoring Statistics Records: Type 50 (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
13C (316)	MN4FCTC	04 - B	FCTOTCT - Total File Control Requests
140 (320)	MN4FCAMC	04 - B	FCAMCT - Number of Access Method Requests
144 (324)	MN4TDGC	04 - B	TDGETCT - Number of Transient Data GETs
148 (328)	MN4TDPC	04 - B	TDPUTCT - Number of Transient Data PUTs
14C (332)	MN4TDRC	04 - B	TDPURCT - Number of Transient Data Purges
150 (336)	MN4TDTC	04 - B	TDTOTCT - Total Transient Data Requests
154 (340)	MN4TSGC	04 - B	TSGETCT - Number of Temporary Storage GETs
158 (344)	MN4TSPAC	04 - B	TSPUTACT - Number of Temporary Storage Aux PUTs
15C (348)	MN4TSPMC	04 - B	TSPUTMCT - Number of Temporary Storage Main PUTs
160 (352)	MN4TSTC	04 - B	TSTOTCT - Total Temporary Storage Requests
164 (356)	MN4BMMC	04 - B	BMSMAPCT - Number of BMS Map Requests
168 (360)	MN4BMIC	04 - B	BMSINCT - Number of BMS In Requests
16C (364)	MN4BMOC	04 - B	BMSOUTCT - Number of BMS Out Requests
170 (368)	MN4BMTC	04 - B	BMSTOTCT - Total BMS Requests
174 (372)	MN4PCLIC	04 - B	PCLINKCT - Number of Program Links
178 (376)	MN4PCXC	04 - B	PCXCTLCT - Number of Program XCTLs
17C (380)	MN4PCLOC	04 - B	PCLOADCT - Number of Program Loads
180 (384)	MN4JCC	04 - B	JCPUWRCT - Number of Journal Output Requests
184 (388)	MN4ICC	04 - B	ICPUINCT - Number of Interval Control Starts
188 (392)	MN4SPPC	04 - B	SPSYNCCT - Number of Syncpoint Requests
18C (396)	MN4SZACT	04 - B	SZALLOCT - Number of FEPI Allocates
190 (400)	MN4SZRCT	04 - B	SZRCVCT - Number of FEPI Receives
194 (404)	MN4SZSCT	04 - B	SZSENDCT - Number of FEPI Sends
198 (408)	MN4SZTCT	04 - B	SZSTRTCT - Number of FEPI Starts
19C (412)	MN4SZCOT	04 - B	SZCHROUT - Number of Characters Sent via FEPI
1A0 (416)	MN4SZCIN	04 - B	SZCHRIN - Number of Characters Received via FEPI
1A4 (420)	MN4SZATO	04 - B	SZALLCTO - Number of FEPI Allocate Timeouts
1A8 (424)	MN4SZRTO	04 - B	SZRCVTO - Number of FEPI Receive Timeouts
1AC (428)	MN4SZTOT	04 - B	SZTOTCT - Total Number of FEPI Requests
1B0 (432)	MN4DIST	08 - M	USRDISPT - User Task Dispatch Time

Table 50. Monitoring Statistics Records: Type 50 (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1B8 (440)	MN4CPUT	08 - M	USRCPUT - User Task CPU Time
1C0 (448)	MN4SUST	08 - M	SUSPTIME - Task Suspend Time
1C8 (456)	MN4DWT	08 - M	DISPWTT - Dispatch Wait Time
1D0 (464)	MN4EXWT	08 - M	EXWTTIME - Exception Wait Time
1D8 (472)	MN4TCWT	08 - M	TCIOWTT - Terminal Control I/O Wait Time
1E0 (480)	MN4FCWT	08 - M	FCIOWTT - File Control I/O Wait Time
1E8 (488)	MN4JCWT	08 - M	JCIOWTT - Journal Control I/O Wait Time
1F0 (496)	MN4TSWT	08 - M	TSIOWTT - Temorary Storage I/O Wait Time
1F8 (504)	MN4IRWT	08 - M	IRIOWTT - IR I/O Wait Time
200 (512)	MN4TDWT	08 - M	TDIOWTT - Transient Data I/O Wait Time
208 (520)	MN4PCLT	08 - M	PCLOADTM - Program Load Time
210 (528)	MN4FDDLY	08 - M	DSPDELAY - 1st Dispatch Delay (TCLASS, MXT,etc.)
218 (536)	MN4FDTCL	08 - M	TCLDELAY - 1st Dispatch Delay Due to TCLASS
220 (544)	MN4FDMXT	08 - M	MXTDELAY - 1st Dispatch Delay Due to MXT
228 (552)	MN4DENQ	08 - M	ENQDELAY - KC ENQ Delay Time
230 (560)	MN461WT	08 - M	LU61WTT - LU61 I/O Wait Time
238 (568)	MN462WT	08 - M	LU62WTT - LU62 I/O Wait Time
240 (576)	MN4SZWT	08 - M	SZWAIT - FEPI Suspend Time
248 (584)	MN4RMIT	08 - M	RMITIME - Total RMI Elapsed Time
250 (592)	MN4RMIS	08 - M	RMISUSP - Total RMI Suspend Time
258 (600)			End of Record

Monitoring Statistics Global Record (MNG - Type 51)

Table 51. Monitoring Statistics Global Records: Type 51

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	MNGER	04 - B	Number of Exception Records
20 (32)	MNGERS	04 - B	Number of Exception Records Supported by Exit
24 (36)	MNGPR	04 - B	Number of Performance Records
28 (40)	MNGPRS	04 - B	Number of Performance Records Supported by Exit
2C (44)	MNGSMFR	04 - B	Number of SMF Records
30 (48)	MNGSMFE	04 - B	Number of SMF Errors
34 (52)	MNGSYSER	04 - B	Number of Sysevent Records
38 (56)	MNGSYSEE	04 - B	Number of Sysevent Errors
3C (60)			End of Record

Monitoring Statistics Resource Record (MNS - Type 52)

This record is available only for CICS systems running CICS Transaction Server (CTS) version 1.1 or higher.

Table 52. Monitoring Statistics Resource Records: Type 52

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	MNSTRID	04 - C	TRAN - Transaction ID
20 (32)	MNSTEID	04 - C	TERM - Terminal ID
24 (36)	MNSUSID	08 - C	USERID - User ID
2C (44)	MNSTRTY	04 - C	TTYPE - Transaction Type
30 (48)	MNSATTT	08 - S	START - Task Start Time
38 (56)	MNSDETT	08 - S	STOP - Task Stop Time
40 (64)	MNSTRSN	04 - C	TRANNUM - Transaction Sequence Number
44 (68)	MNSTPRI	04 - B	TRANPRI - Transaction Priority
48 (72)	MNSTCLSN	08 - C	TCLSNAME - Transaction Class Name
50 (80)	MNSLUNM	08 - C	LUNAME - VTAM Logical Unit Name
58 (88)	MNSPGNM	08 - C	PGMNAME - First Program Name

Table 52. Monitoring Statistics Resource Records: Type 52 (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
60 (96)	MNSNETNM	20 - C	NETUOWPX - Network Unit-of-Work Netname
74 (116)	MNSUOWID	08 - C	NETUOWSX - Network Unit-of-Work Instance/Sequence Number
7C (124)	MNSRSYS	04 - C	RSYSID - Remote SYSID Routed To
80 (128)	MNSPRCNT	04 - B	PERRECNT - Performance Record Count
84 (132)	MNSRMUOW	08 - X	RMUOWID - Recovery Manager Unit-of-Work ID
8C (140)	MNSSRVCL	08 - C	SRVCLSNM - Workload Manager Service Class Name
94 (148)	MNSRPTCL	08 - C	RPTCLSNM - Workload Manager Report Class Name
9C (156)	MNSFCTY	04 - C	FCTYNAME - Transaction Facility Name
A0 (160)	MNSTRFL1	01 - X	Transaction Flag 1
A1 (161)	MNSTRFL2	01 - X	Transaction Flag 2
A2 (162)	MNSTRFL3	01 - X	Transaction Flag 3
A3 (163)	MNSTRFL4	01 - X	Transaction Flag 4
A4 (164)	MNSTRFL5	01 - X	Transaction Flag 5
A5 (165)	MNSTRFL6	01 - X	Transaction Flag 6 - Reserved
A6 (166)	MNSTRFL7	01 - X	Transaction Flag 7 - Reserved
A7 (167)	MNSTRFL8	01 - X	Transaction Flag 8
A8 (168)	MNSNATUR	01 - X	Nature
A9 (169)	MNSSESST	01 - X	Session Type
AA (170)	MNSACMTH	01 - X	Access Method
AB (171)	MNSDVTCD	01 - X	Device Type Code
AC (172)	MNSTECNM	04 - C	TERMCONM - Terminal Connection Name
B0 (176)	MNSBTRID	04 - C	BRDGTRAN - Bridge Transaction ID
B4 (180)	MNSURID	16 - X	RRMSURID - RRMS/MVS Unit of Recovery ID
C4 (196)	MNSPNAME	36 - C	PRCSNAME - Process Name
E8 (232)	MNSPTYPE	08 - C	PRCSTYPE - Process Type
F0 (240)	MNSPRCID	52 - C	PRCSID - Process ID
124 (292)	MNSACTID	52 - C	ACTVTYID - Activity ID
158 (344)	MNSACTNM	16 - C	ACTVTYNM - Activity Name
168 (360)	MNSCIPAD	16 - C	CLIPADDR - Client IP Address

Table 52. Monitoring Statistics Resource Records: Type 52 (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
178 (376)	MNSTGPID	28 - X	TRNGRPID - Transaction Group ID
194 (404)	MNSNETID	08 - C	NETID - Network ID
19C (412)	MNSRLUNM	08 - C	RLUNAME - Real LUNAME
1A4 (420)	MNSTCPSV	08 - C	TCPSRVCE - TCP/IP Service Name
1AC (428)	MNSPORTN	04 - B	PORTNUM - TCP/IP Service Port Number
1B0 (432)	MNSOTSID	128 - X	OTSTID - OTS Transaction ID
230 (560)	MNSERROR	04 - X	TASKFLAG - Transaction Error Flags
234 (564)	MNSABCDO	04 - C	ABCODEO - Original Transaction Abend Codes
238 (568)	MNSABCDC	04 - C	ABCODEC - Current Transaction Abend Code
23C (572)	MNSTYPE	04 - C	RTYPE - Record Type
240 (576)	MNSPINMC	04 - B	TCMSGIN1 - Primary TC Messages In
244 (580)	MNSTCI1C	04 - B	TCCHRIN1 - Primary TC Characters In
248 (584)	MNSPOUMC	04 - B	TCMSGOU1 - Primary TC Messages Out
24C (588)	MNSTCO1C	04 - B	TCCHROU1 - Primary TC Characters Out
250 (592)	MNSSINMC	04 - B	TCMSGIN2 - Secondary TC Messages In
254 (596)	MNSTCI2C	04 - B	TCCHRIN2 - Secondary TC Characters In
258 (600)	MNSSOUMC	04 - B	TCMSGOU2 - Secondary TC Messages Out
25C (604)	MNSTCO2C	04 - B	TCCHROU2 - Secondary TC Characters Out
260 (608)	MNS62IMC	04 - B	TCM62IN2 - Secondary TC Messages for LU6.2 In
264 (612)	MNS62ICH	04 - B	TCC62IN2 - Secondary TC Characters for LU6.2 In
268 (616)	MNS62OMC	04 - B	TCM62OU2 - Secondary TC Messages for LU6.2 Out
26C (620)	MNS62OCH	04 - B	TCC62OU2 - Secondary TC Characters for LU6.2 Out
270 (624)	MNSTAC	04 - B	TCALLOCT - Number of TCTTE Allocate Requests
274 (628)	MNSSCUGB	04 - B	SCUGETCT - Number of User Storage GETMAINs Below Line
278 (632)	MNSSCUGA	04 - B	Number of User Storage GETMAINs Above Line
27C (636)	MNSSCCGB	04 - B	SCCGETCT - Number of CDSA Storage GETMAINs Below Line
280 (640)	MNSSCCGA	04 - B	Number of ECDSA Storage GETMAINs Above Line
284 (644)	MNSUSHWB	04 - B	SCUSRHWM - User Task Storage HWM Below Line
288 (648)	MNSUSHWA	04 - B	User Task Storage HWM Above Line
28C (652)	MNSCHWMB	04 - B	SC24CHWM - CDSA Storage HWM Below Line

Table 52. Monitoring Statistics Resource Records: Type 52 (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
290 (656)	MNSCHWMA	04 - B	SC31CHWM - ECDSA Storage HWM Above Line
294 (660)	MNSUTSOB	08 - X	SCUSRSTG - User Task Storage Occupancy Below Line
29C (668)	MNSUTSOA	08 - X	User Task Storage Occupancy Above Line
2A4 (676)	MNSCOCCB	08 - X	SC24COCC - CDSA Storage Occupancy Below Line
2AC (684)	MNSCOCCA	08 - X	SC31COCC - ECDSA Storage Occupancy Above Line
2B4 (692)	MNSSC24S	04 - B	SC24SGCT - Shared Storage GETMAIN Count Below 16MB
2B8 (696)	MNSSC24G	04 - B	SC24GSHR - Shared Storage Bytes GETMAINed
2BC (700)	MNSSC24F	04 - B	SC24FSHR - Shared Storage Bytes FREEMAINed
2C0 (704)	MNSSC31S	04 - B	SC31SGCT - Shared Storage GETMAIN Count Above 16MB
2C4 (708)	MNSSC31G	04 - B	SC31GSHR - Shared Storage Bytes GETMAINed
2C8 (712)	MNSSC31F	04 - B	SC31FSHR - Shared Storage Bytes FREEMAINed
2CC (716)	MNSPCUSE	04 - B	PCSTGHWM - Program Storage HWM
2D0 (720)	MNSPC31A	04 - B	PC31AHWM - Program Storage HWM Above Line
2D4 (724)	MNSPCUSB	04 - B	PC24BHWM - Program Storage HWM Below Line
2D8 (728)	MNSPCCAH	04 - B	PC31CHWM - ECDSA Program Storage HWM Above Line
2DC (732)	MNSPCCBH	04 - B	PC24CHWM - CDSA Program Storage HWM Below Line
2E0 (736)	MNSPCRAH	04 - B	PC31RHWM - R/O Program Storage HWM Above Line
2E4 (740)	MNSPCRBH	04 - B	PC24RHWM - R/O Program Storage HWM Below Line
2E8 (744)	MNSPCSAH	04 - B	PC31SHWM - Shared Program Storage HWM Above Line
2EC (748)	MNSPCSBH	04 - B	PC24SHWM - Shared Program Storage HWM Below Line
2F0 (752)	MNSFCGC	04 - B	FCGETCT - Number of File GETs
2F4 (756)	MNSFCPC	04 - B	FCPUTCT - Number of File PUTs
2F8 (760)	MNSFCBC	04 - B	FCBRWCT - Number of File Browses
2FC (764)	MNSFCAC	04 - B	FCADDCT - Number of File Adds
300 (768)	MNSFCDC	04 - B	FCDELCT - Number of File Deletes
304 (772)	MNSFCTC	04 - B	FCTOTCT - Total File Control Requests
308 (776)	MNSFCAMC	04 - B	FCAMCT - Number of Access Method Requests
30C (780)	MNSTDGC	04 - B	TDGETCT - Number of Transient Data GETs
310 (784)	MNSTDPC	04 - B	TDPUTCT - Number of Transient Data PUTs
314 (788)	MNSTDRC	4 - B	TDPURCT - Number of Transient Data Purges

Table 52. Monitoring Statistics Resource Records: Type 52 (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
318 (792)	MNSTDTC	04 - B	TDTOTCT - Total Transient Data Requests
31C (796)	MNSTSGC	04 - B	TSGETCT - Number of Temporary Storage GETs
320 (800)	MNSTSPAC	04 - B	TSPUTACT - Number of Temporary Storage PUTs Auxiliary
324 (804)	MNSTSPMC	04 - B	TSPUTMCT - Number of Temporary Storage PUTs Main
328 (808)	MNSTSTC	04 - B	TSTOTCT - Total Temporary Storage Requests
32C (812)	MNSBMMC	04 - B	BMSMAPCT - Number of BMS Map Requests
330 (816)	MNSBMIC	04 - B	BMSINCT - Number of BMS In Requests
334 (820)	MNSBMOC	04 - B	BMSOUTCT - Number of BMS Out Requests
338 (824)	MNSBMTC	04 - B	BMSTOTCT - Total BMS Requests
33C (828)	MNSPCLIC	04 - B	PCLINKCT - Number of Program Links
340 (832)	MNSPCXC	04 - B	PCXCTLCT - Number of Program XCTLs
344 (836)	MNSPCLOC	04 - B	PCLOADCT - Number of Program Loads
348 (840)	MNSPCLUC	04 - B	PCLURMCT - Number of Program Links to URMs
34C (844)	MNSPCDPL	04 - B	PCDPLCT - Number of DPL Program Links
350 (848)	MNSJNLCT	04 - B	JNLWRTCT - Number of Journal Write Requests
354 (852)	MNSLGWCT	04 - B	LOGWRTCT - Number of CICS Logger Write Requests
358 (856)	MNSICC	04 - B	ICPUINCT - Number of Interval Control Starts
35C (860)	MNSICTC	04 - B	ICTOTCT - Total Interval Control Requests
360 (864)	MNSSPPC	04 - B	SPSYNCCT - Number of Syncpoint Requests
364 (868)	MNSCFACT	04 - B	CFCAPICT - Number of OO Class Library API Requests
368 (872)	MNSSZACT	04 - B	SZALLOCT - Number of FEPI Allocates
36C (876)	MNSSZRCT	04 - B	SZRCVCT - Number of FEPI Receives
370 (880)	MNSSZSCT	04 - B	SZSENDCT - Number of FEPI Sends
374 (884)	MNSSZTCT	04 - B	SZSTRTCT - Number of FEPI Starts
378 (888)	MNSSZCOT	04 - B	SZCHROUT - Number of Characters Sent via FEPI
37C (892)	MNSSZCIN	04 - B	SZCHRIN - Number of Characters Received via FEPI
380 (896)	MNSSZATO	04 - B	SZALLCTO - Number of FEPI Allocate Timeouts
384 (900)	MNSSZRTO	04 - B	SZRCVTO - Number of FEPI Receive Timeouts
388 (904)	MNSSZTOT	04 - B	SZTOTCT - Total Number of FEPI Requests
38C (908)	MNSBARSC	04 - B	BARSYNCT - Number of Run Process/Activity Synchronous

Table 52. Monitoring Statistics Resource Records: Type 52 (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
390 (912)	MNSBARAC	04 - B	BARASYCT - Number of Run Process/Activity Asynchronous
394 (916)	MNSBALKC	04 - B	BALKPACT - Number of Link Process/Activity Requests
398 (920)	MNSBADPC	04 - B	BADPROCT - Number of Define Process Requests
39C (924)	MNSBADAC	04 - B	BADACTCT - Number of Define Activity Requests
3A0 (928)	MNSBTPAC	04 - B	BARSPACT - Number of Reset Process/Activity Requests
3A4 (932)	MNSBSPAC	04 - B	BASUPACT - Number of Suspend Process/Activity Requests
3A8 (936)	MNSBRPAC	04 - B	BARMPACT - Number of Resume Process/Activity Requests
3AC (940)	MNSBDCPC	04 - B	BADCPACT - Number of Delete Activity and Cancel
3B0 (944)	MNSBAAPC	04 - B	BAACQPCT - Number of Acquire Process Requests
3B4 (948)	MNSBATPC	04 - B	BATOTPCT - Total Number of Process/Activity Requests
3B8 (952)	MNSBAPDC	04 - B	BAPRDCCT - Number of Process Data Container Requests
3BC (956)	MNSBAADC	04 - B	BAACDCCT - Number of Activity Data Container Requests
3C0 (960)	MNSBATCC	04 - B	BATOTCCT - Total Number of Data Container Requests
3C4 (964)	MNSBAREC	04 - B	BARATECT - Number of Retrieve Reattach Event Requests
3C8 (968)	MNSBADIC	04 - B	BADFIECT - Number of Define Input Event Requests
3CC (972)	MNSBATAC	04 - B	BATIAECT - Number of Timer Associated Event Requests
3D0 (976)	MNSBATEC	04 - B	BATOTECT - Total Number of Event Requests
3D4 (980)	MNSWBRCT	04 - B	WBRCVCT - Number of WEB Receive Requests
3D8 (984)	MNSWBCIN	04 - B	WBCHRIN - Number of Characters Received via WEB Requests
3DC (988)	MNSWBSCT	04 - B	WBSENDCT - Number of WEB Send Requests
3E0 (992)	MNSWBCOT	04 - B	WBCHROUT - Number of Characters Sent via WEB Requests
3E4 (996)	MNSWBTC	04 - B	WBTOTCT - Total Number of WEB Requests
3E8 (1000)	MNSWBRPR	04 - B	WBREPRCT - Number of Repository Reads
3EC (1004)	MNSWBRPW	04 - B	WBREPWCT - Number of Repository Writes
3F0 (1008)	MNSWBERC	04 - B	WBEXTRCT - Number of WEB Extract Requests
3F4 (1012)	MNSWBBRC	04 - B	WBBRWCT - Number of WEB Browse Requests
3F8 (1016)	MNSWBRRC	04 - B	WBREADCT - Number of WEB Read Requests
3FC (1020)	MNSWBWRC	04 - B	WBWRITET - Number of WEB Write Requests
400 (1024)	MNSDHCRC	04 - B	DHCRECT - Number of Document Create Requests
404 (1028)	MNSDHINC	04 - B	DHINSCT - Number of Document Insert Requests

Table 52. Monitoring Statistics Resource Records: Type 52 (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
408 (1032)	MNSDHSTC	04 - B	DHSETCT - Number of Document Set Requests
40C (1036)	MNSDHRTC	04 - B	DHRETCT - Number of Document Retrieve Requests
410 (1040)	MNSDHTC	04 - B	DHTOTCT - Total Number of Document Requests
414 (1044)	MNSDHTDL	04 - B	DHTOTDCL - Total Document Created Length
418 (1048)	MNSSOBEN	04 - B	SOBYENCT - Number of Bytes Encrypted
41C (1052)	MNSSOBDE	04 - B	SOBYDECT - Number of Bytes Decrypted
420 (1056)	MNSSOERC	04 - B	SOEXTRCT - Number of Extract TCP/IP and Extract
424 (1060)	MNSSOCNS	04 - B	SOCNPSCT - Number of Create Non-Persistent Socket Requests
428 (1064)	MNSSOCPS	04 - B	SOCPSCT - Number of Create Persistent Socket Requests
42C (1068)	MNSSONHW	04 - B	SONPSHWM - Non-Persistent Socket HWM
430 (1072)	MNSSOPHW	04 - B	SOPSHWM - Persistent Socket HWM
434 (1076)	MNSSORCT	04 - B	SORCVCT - Number of Socket Receive Requests
438 (1080)	MNSSOCIN	04 - B	SOCHRIN - Number of Characters Received
43C (1084)	MNSSOSCT	04 - B	SOSENDCT - Number of Socket Send Requests
440 (1088)	MNSSOCOT	04 - B	SOCHROUT - Number of Characters Sent
444 (1092)	MNSSOTC	04 - B	SOTOTCT - Total Number of Socket Requests
448 (1096)	MNSIMSRC	04 - B	IMSREQCT - Total Number of IMS Requests
44C (1100)	MNSDB2RC	04 - B	DB2REQCT - Total Number of DB2 Requests
450 (1104)	MNSCHMDC	04 - B	CHMODECT - Number of CICS Dispatcher Change Modes
454 (1108)	MNSTCBAC	04 - B	TCBATTCT - Number of CICS Dispatcher TCB Attaches
458 (1112)	MNSDIST	08 - M	USRDISPT - User Task Dispatch Time
460 (1120)	MNSCPUT	08 - M	USRCPUT - User Task CPU Time
468 (1128)	MNSSUST	08 - M	SUSPTIME - Task Suspend Time
470 (1136)	MNSDWT	08 - M	DISPWTT - Dispatch Wait Time
478 (1144)	MNSQRDSP	08 - M	QRDISPT - User Task QR Mode Dispatch Time
480 (1152)	MNSQRCPU	08 - M	QRCPUT - User Task QR Mode CPU Time
488 (1160)	MNSMSDSP	08 - M	MSDISPT - User Task Other Mode Dispatch Time
490 (1168)	MNSMSCPU	08 - M	MSCPUT - User Task Other Mode CPU Time
498 (1176)	MNSKY8DS	08 - M	KY8DISPT - User Task Key 8 Mode Dispatch Time
4A0 (1184)	MNSKY8CP	08 - M	KY8CPUT - User Task Key 8 Mode CPU Time

Table 52. Monitoring Statistics Resource Records: Type 52 (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
4A8 (1192)	MNSL8CPU	08 - M	L8CPUT - User Task L8 Mode CPU Time
4B0 (1200)	MNSJ8CPU	08 - M	J8CPUT - User Task J8 Mode CPU Time
4B8 (1208)	MNSS8CPU	08 - M	S8CPUT - User Task S8 Mode CPU Time
4C0 (1216)	MNSQRDLY	08 - M	QRMODDLY - QR Mode Delay Time
4C8 (1224)	MNSOTDLY	08 - M	MAXOTDLY - Maximum Open TCB Delay Time
4D0 (1232)	MNSEXWT	08 - M	EXWTTIME - Exception Wait Time
4D8 (1240)	MNSTCWT	08 - M	TCIOWTT - Terminal Control I/O Wait Time
4E0 (1248)	MNSFCWT	08 - M	FCIOWTT - File Control I/O Wait Time
4E8 (1256)	MNSJCWT	08 - M	JCIOWTT - Journal Control I/O Wait Time
4F0 (1264)	MNSTSWT	08 - M	TSIOWTT - Temporary Storage I/O Wait Time
4F8 (1272)	MNSIRWT	08 - M	IRIOWTT - IR I/O Wait Time
500 (1280)	MNSTDWT	08 - M	TDIOWTT - Transient Data I/O Wait Time
508 (1288)	MNSPCLT	08 - M	PCLOADTM - Program Load Time
510 (1296)	MNSFDDLY	08 - M	DSPDELAY - 1st Dispatch Delay (TCLASS, MXT, etc.)
518 (1304)	MNSFDTCL	08 - M	TCLDELAY - 1st Dispatch Delay Due to TCLASS
520 (1312)	MNSFDMXT	08 - M	MXTDELAY - 1st Dispatch Delay Due to MXT
528 (1320)	MNSNQDLY	08 - M	ENQDELAY - Local ENQ Delay Time
530 (1328)	MNSGQDLY	08 - M	GNQDELAY - Global ENQ Delay Time
538 (1336)	MNS61WT	08 - M	LU61WTT - LU61 I/O Wait Time
540 (1344)	MNS62WT	08 - M	LU62WTT - LU62 I/O Wait Time
548 (1352)	MNSSZWT	08 - M	SZWAIT - FEPI Suspend Time
550 (1360)	MNSRMIT	08 - M	RMITIME - Total RMI Elapsed Time
558 (1368)	MNSRMIS	08 - M	RMISUSP - Total RMI Suspend Time
560 (1376)	MNSSYNCT	08 - M	SYNCTIME - Syncpoint Elapsed Time
568 (1384)	MNSRLSWT	08 - M	RLSWAIT - RLS Wait Time
570 (1392)	MNSRLSCP	08 - M	RLSCPUT - RLS SRB CPU Time
578 (1400)	MNSLMDLY	08 - M	LMDELAY - Lock Manager Delay Time
580 (1408)	MNSWTXWT	08 - M	WTEXWAIT - Wait External Wait Time
588 (1416)	MNSWCEWT	08 - M	WTCEWAIT - Wait CICS/Event Wait Time
590 (1424)	MNSICDLY	08 - M	ICDELAY - Interval Control Delay Time

Table 52. Monitoring Statistics Resource Records: Type 52 (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
598 (1432)	MNSGVPWT	08 - M	GVUPWAIT - Give Up Control Wait Time
5A0 (1440)	MNSTSHWT	08 - M	TSSHWAIT - Shared Temporary Storage Wait Time
5A8 (1448)	MNSCDTWT	08 - M	CFDTWAIT - CF Data Table Wait Time
5B0 (1456)	MNSSYWTT	08 - M	SRVSYWTT - Server Syncpoint Wait Time
5B8 (1464)	MNSRRSWT	08 - M	RRMSWAIT - RRMS/MVS Wait Time
5C0 (1472)	MNSRTRWT	08 - M	RUNTRWTT - Run Transaction Wait Time
5C8 (1480)	MNSSYDLY	08 - M	SYNCDLY - Syncpoint Delay Time
5D0 (1488)	MNSSOWT	08 - M	SOIOWTT - Socket I/O Wait Time
5D8 (1496)	MNSIMSWT	08 - M	IMSWAIT - IMS Wait Time
5E0 (1504)	MNSRDQWT	08 - M	DB2RDYQW - DB2 READYQ Wait Time
5E8 (1512)	MNSCONWT	08 - M	DB2CONWT - DB2 Connection Wait Time
5F0 (1520)	MNSDB2WT	08 - M	DB2WAIT - DB2 Wait Time
5F8 (1528)	MNSJVMT	08 - M	JVMTIME - Total JVM Elapsed Time
600 (1536)	MNSJVMS	08 - M	JVMSUSP - Total JVM Suspend Time
608 (1544)	MNSSOOWT	08 - M	SOOIOWTT - Outbound Socket I/O Wait Time
610 (1552)	MNSRQRWT	08 - M	RQRWAIT - Request Receiver Wait Time
618 (1560)	MNSRQPWT	08 - M	RQPWAIT - Request Processor Wait Time
620 (1568)	MNSOIDWT	08 - M	OTSINDWT - OTS In Doubt Wait Time
628 (1576)	MNSJVMIT	08 - M	JVMITIME - JVM Elapsed Time Initialize
630 (1584)	MNSJVMRT	08 - M	JVMRTIME - JVM Elapsed Time Resetting
638 (1592)			End of Record

Transaction Dump Resource Record (TDS - Type 55)

Table 53. Transaction Dump Resource Records: Type 55

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	TDSCODE	04 - C	Dump Code
20 (32)	TDSSTKN	04 - B	Number of System Dumps Taken
24 (36)	TDSSSUPR	04 - B	Number of System Dumps Suppressed
28 (40)	TDSTTKN	04 - B	Number of Transaction Dumps Taken
2C (44)	TDSTSUPR	04 - B	Number of Transaction Dumps Suppressed
30 (48)			End of Record

Transaction Dump Global Record (TDG - Type 57)

Table 54. Transaction Dump Global Records: Type 57

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	TDGTAKEN	04 - B	Number of Transaction Dumps Taken
20 (32)	TDGSUPP	04 - B	Number of Transaction Dumps Suppressed
24 (36)			End of Record

System Dump Resource Record (SDS - Type 58)

Table 55. System Dump Resource Records: Type 58

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	SDSCODE	08 - C	Dump Code
24 (36)	SDSSTKN	04 - B	Number of System Dumps Taken
28 (40)	SDSSSUPR	04 - B	Number of System Dumps Suppressed
2C (44)	SDSTTKN	04 - B	Number of Transaction Dumps Taken
30 (48)	SDSTSUPR	04 - B	Number of Transaction Dumps Suppressed
34 (52)			End of Record

System Dump Global Record (SDG - Type 5A)

Table 56. System Dump Global Records: Type 5A

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	SDGTAKEN	04 - B	Number of System Dumps Taken
20 (32)	SDGSUPPR	04 - B	Number of System Dumps Suppressed
24 (36)			End of Record

Logger Record (LGR - Type 5D)

Table 57. Logger Records: Type 5D

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	LGRJNLNM	08 - C	Journal Name
24 (36)	LGRJTYPE	01 - X	Journal Type - MVS/SMF/Dummy
26 (38)	LGRSTRNM	26 - C	Log Stream Name
40 (64)	LGRWRITE	04 - B	Number of Journal Writes
44 (68)	LGRBYTES	08 - X	Total Number of Bytes Written
4C (76)	LGRBUFLS	04 - B	Number of Buffer Flush Requests
50 (80)			End of Record

Log Stream Record (LGS - Type 5E)

Table 58. Log Stream Records: Type 5E

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	LGSSTRNM	26 - C	Log Stream Name
38 (56)	LGSWRITE	04 - B	Number of Log Writes
3C (60)	LGSBYTES	08 - X	Total Number of Bytes Written
44 (68)	LGSCUFWT	04 - B	Current Number of Force Waits
48 (72)	LGSPKFWT	04 - B	Peak Number of Force Waits
4C (76)	LGSTFCWA	04 - B	Total Number of Force Waits
50 (80)	LGSBUFWA	04 - B	Number of Waits Due to Buffer Full
54 (84)	LGSBRWST	04 - B	Number of Log Browse Starts
58 (88)	LGSBRWRE	04 - B	Number of Log Browse Reads
5C (92)	LGSDELET	04 - B	Number of Log Deletes
60 (96)	LGSRTYER	04 - B	Number of Retryable Errors
64 (100)	LGSBUFAP	04 - B	Number of Buffer Append Requests
68 (104)	LGSSYSLG	01 - C	System Log Flag
69 (105)	LGSDONLY	01 - C	DASD Only Flag
6A (106)		02	Reserved for Future Use
6C (108)	LGSSTRUC	16 - C	CF Structure Name
7C (124)	LGSMAXBL	04 - B	Maximum Block Length
80 (128)	LGSRETPD	04 - B	Data Retention Period
84 (132)	LGSAUTOD	01 - C	Data Auto Delete Flag
86 (134)			End of Record

Enqueue Manager Record (EQG - Type 61)

Table 59. Enqueue Manager Records: Type 61

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	EQGNPOOL	04 - B	Number of Enqueue Pools Following
20 (32)	EQGPOOL	08 - C	Enqueue Pool ID
28 (40)	EQGTNQSI	04 - B	Total Enqueues Issued
2C (44)	EQGTNQSW	04 - B	Total Enqueues Waited
30 (48)	EQGTNQWT	08 - M	Time Enqueues Had Waited (STCK)
38 (56)	EQGCNQSW	04 - B	Current Enqueues Waiting
3C (60)	EQGCNQWT	08 - M	Current Enqueues Waiting Time (STCK)
44 (68)	EQGGNQSW	04 - B	Total Sysplex Enqueues Waited
48 (72)	EQGGNQWT	08 - M	Time Sysplex Enqueues Had Waited (STCK)
50 (80)	EQGSNQSW	04 - B	Current Sysplex Enqueues Waiting
54 (84)	EQGSNQWT	08 - M	Current Sysplex Enqueues Wait Time (STCK)
5C (92)	EQGTNQSR	04 - B	Total Enqueues Retained
60 (96)	EQGTNQRT	08 - M	Time Enqueues were Retained (STCK)
68 (104)	EQGCNQSR	04 - B	Current Enqueues Retained
6C (108)	EQGCNQRT	08 - M	Current Enqueues Retained Time (STCK)
74 (116)	EQGTIRJB	04 - B	Total Immediately Rejected ENQBUSY
78 (120)	EQGTIRJR	04 - B	Total Immediately Rejected ENQ Retained
7C (124)	EQGTWRJR	04 - B	Total Waiting Enqueues Rejected Retained
80 (128)	EQGTWPOP	04 - B	Total Waiting Enqueues Purged by Operator
84 (132)	EQGTWPTO	04 - B	Total Waiting Enqueues Purged by Timeout
88 (136)			End of Record

Recovery Manager Record (RCV - Type 63)

Table 60. Recovery Manager Records: Type 63

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	RCVSYFWD	04 - B	Total Syncpoints Forward
20 (32)	RCVSYBWD	04 - B	Total Syncpoints Backward
24 (36)	RCVRESYN	04 - B	Total Resynchronizations
28 (40)	RCVTSHIN	04 - B	Total Shunted UOWs for Indoubt
2C (44)	RCVTSHTI	08 - M	Total Time Shunted for Indoubt (STCK)
34 (52)	RCVCSHIN	04 - B	Current UOWs Shunted for Indoubt
38 (56)	RCVCSHTI	08 - M	Current Time Shunted Indoubt (STCK)
40 (64)	RCVTSHRO	04 - B	Total UOWs Shunted for RO Commit Fail
44 (68)	RCVTSHTR	08 - M	Total Time Shunted for RO Fail (STCK)
4C (76)	RCVCSHRO	04 - B	Current UOWs Shunt for RO Commit Fail
50 (80)	RCVCSHTR	08 - M	Current Time Shunted for RO Fail (STCK)
58 (88)	RCVIAFTR	04 - B	Total Forced Indoubt Actions - Trandef
5C (92)	RCVIAFTI	04 - B	Total Forced Indoubt Actions - Timeout
60 (96)	RCVIAFNW	04 - B	Total Forced Indoubt Actions - Nowait
64 (100)	RCVIAFOP	04 - B	Total Forced Indoubt Actions - Operator
68 (104)	RCVIAFOT	04 - B	Total Forced Indoubt Actions - Other
6C (108)	RCVIAMIS	04 - B	Total Indoubt Action Mismatches
70 (112)	RCVNWTD	04 - B	Total Forced for No Waiting in TD
74 (116)	RCVNW61	04 - B	Total Forced for No Waiting in LU61
78 (120)	RCVNWMRO	04 - B	Total Forced for No Waiting in MRO
7C (124)	RCVNWRMI	04 - B	Total Forced for No Waiting in RMI
80 (128)	RCVNWOTH	04 - B	Total Forced for No Waiting in Other
84 (132)			End of Record

DB2 Connection Record (D2G - Type 66)

Table 61. DB2 Connection Records: Type 66

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	D2GCONNM	08 - C	Name of the DB2CONN
24 (36)	D2GID	04 - C	DB2 Sysid
28 (40)	D2GRELEA	04 - C	Release of DB2
2C (44)	D2GCONGT	08 - M	Connect Time (GMT)
34 (52)	D2GCONLT	08 - M	Connect Time (Local)
3C (60)	D2GDISGT	08 - M	Disconnect Time (GMT)
44 (68)	D2GDISLT	08 - M	Disconnect Time (Local)
4C (76)	D2GTCBLI	04 - B	Maximum Number of TCBs
50 (80)	D2GTCBCU	04 - B	Current Number of TCBs
54 (84)	D2GTCBHW	04 - B	HWM of TCBs
58 (88)	D2GTCBFR	04 - B	Current Number of Free TCBs
5C (92)	D2GTCBRQ	04 - B	Number of Tasks on TCB Ready Queue
60 (96)	D2GTCBRH	04 - B	Peak Number of Tasks on TCB Ready Queue
64 (100)		40	Reserved for Future Use
8C (140)	D2GPLANN	08 - C	Pool Statistics
94 (148)	D2GPLANX	08 - C	PLANEXIT Name, if any
9C (156)	D2GAUTH	08 - C	Static Authorization ID, if any
A4 (164)	D2GAUTHT	01 - X	Pool Authorization Type, if any
A5 (165)	D2GACCOU	01 - X	ACCOUNTREC Setting
A6 (166)	D2GTHRDW	01 - X	THREADWAIT Setting
A7 (167)	D2GPRIOR	01 - X	Thread Priority
A8 (168)	D2GCALLS	04 - B	Number of Calls Using Pool
AC (172)	D2GSIGNO	04 - B	Number of Pool Signons
B0 (176)	D2GCOMMI	04 - B	Number of Commits
B4 (180)	D2GABORT	04 - B	Number of Aborts
B8 (184)	D2GSPHAS	04 - B	Number of Single Phase Commits
BC (188)	D2GTREUS	04 - B	Number of Thread Reuses

Table 61. DB2 Connection Records: Type 66 (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
C0 (192)	D2GTTERM	04 - B	Number of Pool Thread Terminates
C4 (196)	D2GTWAIT	04 - B	Number of Pool Thread Waits
C8 (200)	D2GTLIMI	04 - B	Maximum Number of Pool Threads
CC (204)	D2GTCURR	04 - B	Current Number of Pool Threads
D0 (208)	D2GTHWM	04 - B	Peak Number of Pool Threads
D4 (212)	D2GTACUR	04 - B	Current Number of Tasks
D8 (216)	D2GTAHWM	04 - B	Peak Number of Tasks
DC (220)	D2GTATOT	04 - B	Total Number of Tasks
E0 (224)	D2GRCURR	04 - B	Number of Tasks on Ready Queue
E4 (228)	D2GRHWM	04 - B	Peak Number of Tasks on Ready Queue
E8 (232)		28	Reserved for Future Use
104 (260)	D2GCAUTH	08 - C	DSNC Command Statistics
10C (268)	D2GCAUTT	01 - X	Command Authorization Type, if any
10D (269)		03	Reserved for Future Use
110 (272)	D2GCCALL	04 - B	Number of DSNC Command Calls
114 (276)	D2GCSIGN	04 - B	Number of Command Signons
118 (280)	D2GCTTER	04 - B	Number of Command Thread Terminates
11C (284)	D2GCTOVE	04 - B	Number of Overflows to Pool
120 (288)	D2GCTLIM	04 - B	Maximum Number of Command Threads
124 (292)	D2GCTCUR	04 - B	Current Number of Command Threads
128 (296)	D2GCTHWM	04 - B	Peak Number of Command Threads
12C (300)			End of Record

DB2 Entry Record (D2S - Type 67)

Table 62. DB2 Entry Records: Type 67

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	D2SNAME	08 - C	Name of the DB2ENTRY
24 (36)	D2SPNAME	08 - C	Static Plan Name, if any
2C (44)	D2SPEXIT	08 - C	PLANEXIT Name, if any
34 (52)	D2SAUTHI	08 - C	Static Authorization ID, if any
3C (60)	D2SAUTHT	01 - X	Authorization Type, if any
3D (61)	D2SACCOU	01 - X	ACCOUNTREC Setting
3E (62)	D2STWAIT	01 - X	THREADWAIT Setting
3F (63)	D2SPRIOR	01 - X	Thread Priority
40 (64)	D2SCALLS	04 - B	Number of Calls Using DB2ENTRY
44 (68)	D2SSIGNO	04 - B	Number of Signons
48 (72)	D2SCOMMI	04 - B	Number of Commits
4C (76)	D2SABORT	04 - B	Number of Aborts
50 (80)	D2SSPHAS	04 - B	Number of Single Phase Commits
54 (84)	D2STREUS	04 - B	Number of Thread Reuses
58 (88)	D2STTERM	04 - B	Number of Thread Terminates
5C (92)	D2STOVER	04 - B	Number of Thread Waits or Overflows
60 (96)	D2STLIMI	04 - B	Maximum Number of Threads
64 (100)	D2STCURR	04 - B	Current Number of Threads
68 (104)	D2STHWM	04 - B	Peak Number of Threads
6C (108)	D2SPLIM	04 - B	Maximum Number of Protected Threads
70 (112)	D2SPTCUR	04 - B	Current Number of Protected Threads
74 (116)	D2SPTHWM	04 - B	Peak Number of Protected Threads
78 (120)	D2STACUR	04 - B	Current Number of Tasks
7C (124)	D2STAHWM	04 - B	Peak Number of Tasks
80 (128)	D2STATOT	04 - B	Total Number of Tasks
84 (132)	D2SRCURR	04 - B	Number of Tasks on Ready Queue

Table 62. DB2 Entry Records: Type 67 (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
88 (136)	D2SRHWM	04 - B	Peak Number of Tasks on Ready Queue
8C (140)			End of Record

TCP/IP Services Global Record (TCG - Type 6B)

Table 63. TCP/IP Services Global Records: Type 6B

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	TCGMSLIM	04 - B	Maximum Sockets Limit
20 (32)	TCGCISOC	04 - B	Current Inbound Sockets
24 (36)	TCGPISOC	04 - B	Peak Inbound Sockets
28 (40)	TCGCOSOC	04 - B	Current Outbound Sockets
2C (44)	TCGPOSOC	04 - B	Peak Outbound Sockets
30 (48)	TCGCPSOC	04 - B	Current Persistent Outbound Sockets
34 (52)	TCGPPSOC	04 - B	Peak Persistent Outbound Sockets
38 (56)	TCGISOCR	04 - B	Number Inbound Sockets Created
3C (60)	TCGOSOCR	04 - B	Number Outbound Sockets Created
40 (64)	TCGOSOCC	04 - B	Number of Outbound Sockets Closed
44 (68)	TCGTMSOC	04 - B	Number of Times at Maximum Sockets
48 (72)	TCGDMSOC	04 - B	Total Number Delayed at Maximum Sockets
4C (76)	TCGQMSOC	08 - M	Total Delay Time at Maximum Sockets
54 (84)	TCGTOSOC	04 - B	Timeouts While at Maximum Sockets
58 (88)	TCGCDSOC	04 - B	Current Delayed at Maximum Sockets
5C (92)	TCGPDSOC	04 - B	Peak Delayed at Maximum Sockets
60 (96)	TCGCQSOC	08 - M	Current Delay Time at Maximum Sockets
68 (104)			End of Record

TCP/IP Services Resource Record (TCP - Type 6C)

Table 64. TCP/IP Services Records: Type 6C

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	TCPNAME	08 - C	TCP/IP Service Name
24 (36)	TCPTRATT	04 - B	Number of Transactions Attached
28 (40)	TCPCCONN	04 - B	Current Number of Connections
2C (44)	TCPPCONN	04 - B	Peak Number of Connections
30 (48)	TCPOPENG	08 - M	Service Open Time (GMT)
38 (56)	TCPOPENL	08 - M	Service Open Time (Local)
40 (64)	TCPCLOSG	08 - M	Service Close Time (GMT)
48 (72)	TCPCLOSL	08 - M	Service Close Time (Local)
50 (80)	TCPPNUMB	02 - X	TCP/IP Service Port Number
52 (82)	TCPSSLSU	01 - X	TCP/IP Service SSL Support
54 (84)	TCPBACKL	04 - B	TCP/IP Service Backlog
58 (88)	TCPSENDS	04 - B	Number of Sends - All Sockets
5C (92)	TCPBSENT	08 - X	Number of Bytes Sent - All Sockets
64 (100)	TCPRECEI	04 - B	Number of Receives - All Sockets
68 (104)	TCPBRECE	08 - X	Number of Bytes Received - All Sockets
70 (112)	TCPIPADD	15 - C	TCP/IP Service IP Address
80 (128)	TCPWLMGR	18 - C	TCP/IP Service WLM DNS Group
94 (148)	TCPPROTO	08 - C	TCP/IP Service Protocol
9C (156)			End of Record

Request Model Record (RQM - Type 6F)

Table 65. Request Model Records: Type 6F

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	RQMNAME	08 - C	Request Model Name
24 (36)	RQMCNAME	04 - B	CORBA Server Name
28 (40)	RQMTRNID	04 - C	Transaction ID
2C (44)		04	Reserved for Future Use
30 (48)	RQMMODUL	255 - C	Request Model Module
12F (303)	RQMIFACE	255 - C	Request Model Interface
22E (558)	RQMOPER	255 - C	Request Model Operation
330 (816)	RQMBNME	240 - C	Request Model Bean Name
430 (1072)	RQMMTYEP	01 - B	Request Model Type
431 (1073)	RQMITYPE	01 - B	Interface Type
432 (1074)			End of Record

CORBA Server Record (CRB - Type 72)

Table 66. CORBA Server Records: Type 72

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	CRBNAME	04 - C	CORBA Server Name
20 (32)	CRBJNDI	255 - C	CORBA Server JNDI Prefix
11F (287)	CRBIPNAM	255 - C	CORBA Server TCP/IP Host Name
21E (542)	CRBSDIR	255 - C	CORBA Server Shelf Directory
320 (800)	CRBPORT	04 - B	CORBA Server Port Number
324 (804)	CRBSSLPR	04 - B	CORBA Server SSL Port Number
328 (808)	CRBSSLS	01 - B	CORBA Server SSL Support
329 (809)		03	Reserved for Future Use
32C (812)	CRBSTOUT	04 - B	CORBA Server Session Bean Timeout
330 (816)	CRBOACT	04 - B	Number of Object Activates

Table 66. CORBA Server Records: Type 72 (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
334 (820)	CRBOSTOR	04 - B	Number of Object Stores
338 (824)	CRBFACT	04 - B	Number of Failed Activates
33C (828)			End of Record

JVM Pool Record (JVM - Type 75)

Table 67. JVM Pool Records: Type 75

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	JVMCJVMS	04 - B	Current JVMs
20 (32)	JVMPJVMS	04 - B	Peak JVMs
24 (36)	JVMTOTRQ	04 - B	Total JVM Program Requests
28 (40)	JVMREREQ	04 - B	JVM Requests - With JVM Reuse
2C (44)	JVMINREQ	04 - B	JVM Requests - JVM Initialized
30 (48)	JVMMMREQ	04 - B	JVM Requests - JVM Mismatch
34 (52)	JVMTRREQ	04 - B	JVM Requests - JVM Terminated
38 (56)			End of Record

System Initialization Table Record (STI - Type C8)

Table 68. System Initialization Table Records: Type C8

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	STIOPSYS	01 - C	Operating System
1D (29)	STIOPREL	01 - X	Operating System Release
1E (30)	STICICS	01 - C	CICS System
1F (31)	STICIREL	01 - X	CICS System Release
20 (32)	STIOSCOR	04	Unused - Obsolete
24 (36)	STISCSZ	04 - B	Storage Cushion Size
28 (40)	STIPGSIZ	02 - B	Page Size
2A (42)	STIMONCL	01 - X	SMP Monitor Class Specification
2B (43)	STIGAPLD	08 - C	VTAM Generic Applid
33 (51)	STISAPLD	08 - C	VTAM Specific Applid
3B (59)	STIPL1	01 - C	PL/1 Indicator
3C (60)	STIPLSH	01 - C	PL/1 Shared Library Indicator
3D (61)	STILPA	01 - C	LPA Option
3E (62)	STIVSPSF	02	Unused - Obsolete
40 (64)	STIRAPOL	02	Unused - Obsolete
42 (66)	STIRAMAX	02	Unused - Obsolete
44 (68)	STIPSBL	02 - B	PSB Pool Size Specification
46 (70)	STIDMBL	02 - B	DMB Pool Size Specification
48 (72)	STIENQMS	02 - B	ENQ Pool Size Specification
4A (74)	STITHRED	02 - B	Number of DL/I Threads
4C (76)	STIMXTSK	02 - B	Maximum Tasks
4E (78)	STIAMXT	02	Unused - Obsolete
50 (80)	STIMXT1	02	Unused - Obsolete
52 (82)	STIMXT2	02	Unused - Obsolete
54 (84)	STIMXT3	02	Unused - Obsolete
56 (86)	STIMXT4	02	Unused - Obsolete
58 (88)	STIMXT5	02	Unused - Obsolete
5A (90)	STIMXT6	02	Unused - Obsolete

Table 68. System Initialization Table Records: Type C8 (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
5C (92)	STIMXT7	02	Unused - Obsolete
5E (94)	STIMXT8	02	Unused - Obsolete
60 (96)	STIMXT9	02	Unused - Obsolete
62 (98)	STIMXTA	02	Unused - Obsolete
64 (100)		08	Reserved for Future Use
6C (108)			End of Record

DB2 Plan Activity Record (RCT - Type C9)

Table 69. DB2 Plan Activity Records: Type C9

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	RCTPLID	08 - C	Plan Name
24 (36)	RCTTXID	04 - C	Transaction ID
28 (40)	RCTUSECT	04 - B	Plan/Transaction Use Count
2C (44)	RCTTHWTS	04 - B	Plan/Transaction Thread Waits
30 (48)	RCTAUTHS	04 - B	Plan/Transaction Authorizations
34 (52)	RCTTHRDM	02 - B	Maximum Number of Threads
36 (54)	RCTTHRDA	02 - B	Number of Active Threads
38 (56)	RCTTHRDS	02 - B	Number of Dedicated Threads
3A (58)	RCTTHWM	02 - B	Thread High-Water Mark
3C (60)	RCTSQ#RQ	04 - B	Total SQL Requests
40 (64)	RCTSQTIM	04 - K	Total SQL Elapsed Time
44 (68)	RCTSQ#SE	04 - B	Number of SELECT Requests
48 (72)	RCTSQTSE	04 - K	Elapsed Time for SELECT Requests
4C (76)	RCTSQ#OP	04 - B	Number of OPEN CURSOR Requests
50 (80)	RCTSQTOP	04 - K	Elapsed Time for OPEN CURSOR Requests
54 (84)	RCTSQ#CL	04 - B	Number of CLOSE CURSOR Requests
58 (88)	RCTSQTCL	04 - K	Elapsed Time for CLOSE CURSOR Requests
5C (92)	RCTSQ#IN	04 - B	Number of INSERT Requests

Table 69. DB2 Plan Activity Records: Type C9 (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
60 (96)	RCTSQTIN	04 - K	Elapsed Time for INSERT Requests
64 (100)	RCTSQ#DE	04 - B	Number of DELETE Requests
68 (104)	RCTSQTDE	04 - K	Elapsed Time for DELETE Requests
6C (108)	RCTSQ#UP	04 - B	Number of UPDATE Requests
70 (112)	RCTSQTUP	04 - K	Elapsed Time for UPDATE Requests
74 (116)	RCTSQ#FE	04 - B	Number of FETCH Requests
78 (120)	RCTSQTFE	04 - K	Elapsed Time for FETCH Requests
7C (124)	RCTSQ#CO	04 - B	Number of COMMIT Requests
80 (128)	RCTSQTCO	04 - K	Elapsed Time for COMMIT Requests
84 (132)	RCTSQ#OT	04 - B	Number of OTHER Requests
88 (136)	RCTSQTOT	04 - K	Elapsed Time for OTHER Requests
8C (140)		12	Reserved for Future Use
98 (152)			End of Record

Service Level Response Record (Type CA)

The time frames for Service Level Response records are set in the CMRSOPT module.

Table 70. Service Level Response Records: Type CA

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	LTXLITL	04 - C	Literal TIME
20 (32)	LTIM001	04 - K	Time Frame 001
24 (36)	LTIM002	04 - K	Time Frame 002
28 (40)	LTIM003	04 - K	Time Frame 003
2C (44)	LTIM004	04 - K	Time Frame 004
30 (48)	LTIM005	04 - K	Time Frame 005
34 (52)	LTIM006	04 - K	Time Frame 006
38 (56)	LTIM007	04 - K	Time Frame 007
3C (60)	LTIM008	04 - K	Time Frame 008
40 (64)	LTIM009	04 - K	Time Frame 009
44 (68)	LTIM010	04 - K	Time Frame 010

Table 70. Service Level Response Records: Type CA (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
48 (72)	LTIM011	04 - K	Time Frame 011
4C (76)	LTIM012	04 - K	Time Frame 012
50 (80)	LTIM013	04 - K	Time Frame 013
54 (84)	LTIM014	04 - K	Time Frame 014
58 (88)	LTIM015	04 - K	Time Frame 015
5C (92)	LTIM016	04 - K	Time Frame 016
60 (96)	LTIM017	04 - K	Time Frame 017
64 (100)	LTIM018	04 - K	Time Frame 018
68 (104)	LTXCNT	04 - B	Total Transaction Count
6C (108)	LTX001	04 - B	Count Frame 001
70 (112)	LTX002	04 - B	Count Frame 002
74 (116)	LTX003	04 - B	Count Frame 003
78 (120)	LTX004	04 - B	Count Frame 004
7C (124)	LTX005	04 - B	Count Frame 005
80 (128)	LTX006	04 - B	Count Frame 006
84 (132)	LTX007	04 - B	Count Frame 007
88 (136)	LTX008	04 - B	Count Frame 008
8C (140)	LTX009	04 - B	Count Frame 009
90 (144)	LTX010	04 - B	Count Frame 010
94 (148)	LTX011	04 - B	Count Frame 011
98 (152)	LTX012	04 - B	Count Frame 012
9C (156)	LTX013	04 - B	Count Frame 013
A0 (160)	LTX014	04 - B	Count Frame 014
A4 (164)	LTX015	04 - B	Count Frame 015
A8 (168)	LTX016	04 - B	Count Frame 016
AC (172)	LTX017	04 - B	Count Frame 017
B0 (176)	LTX018	04 - B	Count Frame 018
B4 (180)			End of Record

VSAM DSN Record (Type CB)

Table 71. VSAM DSN Records: Type CB

Type of Information	Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
General	1C (28)	DSNFCT	08 - C	File Control Name
VSAM ACB	24 (36)	DSNDEXCP	04 - B	Number of Physical I/Os
Data	28 (40)	DSNDCASP	04 - B	Number of CA Splits
	2C (44)	DSNDCISP	04 - B	Number of CI Splits
	30 (48)	DSNDDELT	04 - B	Number of VSAM Deletes
	34 (52)	DSNDUPDT	04 - B	Number of VSAM Updates
	38 (56)	DSNDINST	04 - B	Number of VSAM Inserts
	3C (60)	DSNDREAD	04 - B	Number of VSAM Reads
VSAM ACB	40 (64)	DSNIEXCP	04 - B	Number of Physical I/Os
Index	44 (68)	DSNICASP	04 - B	Number of CA Splits
	48 (72)	DSNICISP	04 - B	Number of CI Splits
	4C (76)	DSNIDELT	04 - B	Number of VSAM Deletes
	50 (80)	DSNIUPDT	04 - B	Number of VSAM Adds
	54 (84)	DSNIINST	04 - B	Number of VSAM Inserts
	58 (88)	DSNIREAD	04 - B	Number of VSAM Reads
General	5C (92)	DSNDCISZ	04 - B	Data Component CI Size
	60 (96)	DSNICISZ	04 - B	Index Component CI Size
	64 (100)	DSNLSRPL	01 - X	LSR Pool ID (0 = Non-LSR)
	65 (101)	DSNAME	44 - C	Data Set Name
	91 (145)	DSNUCB	03 - C	UCB Unit Name
	94 (148)	DSNVOL	06 - C	Volume Serial ID #1
	9A (154)	DSNVOL2	06 - C	Volume Serial ID #2
	A0 (160)	DSNVOL3	06 - C	Volume Serial ID #3
	A6 (166)	DSNVOL4	06 - C	Volume Serial ID #4
	AC (172)	DSNVOL5	06 - C	Volume Serial ID #5
	B2 (178)	DSNDSMS	02 - B	Number of Strings
	B4 (180)	DSNDSTS	04 - B	Number Waited on String
	B8 (184)	DSNDSHS	02 - B	HWM Waited on String

Table 71. VSAM DSN Records: Type CB (Continued)

Type of Information	Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
	BA (186)	DSNBUFD	02 - B	Number of Data Buffers
	BC (188)	DSNBUFI	02 - B	Number of Index Buffers
	BE (190)	DSNDSTB	04 - B	Number Waited on Buffer
	C2 (194)	DSNDSHB	02 - B	HWM Waited on Buffer
	C4 (196)	DSNPERCI	02 - B	Free Space % CI
	C6 (198)	DSNPERCA	02 - B	Free Space % CA
	C8 (200)	DSNTYPE	01 - C	Data Set Type
	C9 (201)	DSNIMBED	01 - C	Imbed Option
	CA (202)	DSNREPLI	01 - C	Replicate Option
	CB (203)	DSNRANGE	01 - C	Keys Range Option
	CC (204)	DSNUCBX	04 - C	Extended UCB Address
	DO (208)			End of Record

Global Performance Record (T6F - Type CC)

Note: The Global Performance record was formerly distributed as a Type 6F record.

Table 72. Global Performance Records: Type CC

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	T6FSUDT	04 - B	Total User Dispatched Time
20 (32)	T6FSUCP	04 - B	Total User Processor Time
24 (36)	T6FSUDC	04 - B	Total User Dispatch Count
28 (40)	T6FSTCDT	04	Unused - Obsolete
2C (44)	T6FSTCCP	04	Unused - Obsolete
30 (48)	T6FSTCDC	04	Unused - Obsolete
34 (52)	T6FSJCDT	04	Unused - Obsolete
38 (56)	T6FSJCCP	04	Unused - Obsolete
3C (60)	T6FSJCDC	04	Unused - Obsolete
40 (64)	T6FSKCDT	04	Unused - Obsolete
44 (68)	T6FSKCCP	04	Unused - Obsolete
48 (72)	T6FSKCDC	04	Unused - Obsolete
4C (76)	T6FSSRBT	04 - B	SRB Time (stored in units of 1.048576 seconds)
50 (80)	T6FSPGIN	04 - B	Count of Page-In Operations
54 (84)	T6FSPGOU	04 - B	Count of Page-Out Operations
58 (88)	T6FSSHWM	04 - B	DSA High-Water Mark in Pages Includes CDSA, SDSA, and UDSA.
5C (92)	T6FSSCNT	04 - B	Interval Accumulator Count
60 (96)	T6FSOSCP	04 - B	Total Processor Time Spent in CICS Address Space
64 (100)	T6FSOSWT	04 - B	Total of CICS TCB Wait Times
68 (104)	T6FSOSWC	04 - B	Total of All CICS TCB Wait Counts
6C (108)	T6FTIME	04 - B	Elapsed Wall-Clock Time
70 (112)	T6FTRMCT	04 - B	Terminal-Attached Task Count
74 (116)	T6FTRNCT	04 - B	Total Task Count
78 (120)	T6FSFLAG	01 - C	File Type 6F Monitor Flag Indicator: **'F'** = First **' '** = Running **'L'** = Last

Table 72. Global Performance Records: Type CC (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
79 (121)	T6FRSPTM	04 - B	Terminal-Attached Cumulative Response Time for Frame
7D (125)	T6FMAXTC	02 - B	Maximum Active Tasks
80 (128)	T6FQRCPU	04 - K	Quasi-Reentrant TCB CPU Time
84 (132)	T6FQRWTT	04 - K	Total Quasi-Reentrant TCB MVS Wait Time
88 (136)	T6FQRWTC	04 - K	Number of Quasi-Reentrant TCB MVS Waits Issued
8C (140)	T6FROCPU	04 - K	Resource-Owning TCB CPU Time
90 (144)	T6FROWTT	04 - K	Total Resource-Owning TCB MVS Wait Time
94 (148)	T6FROWTC	04 - K	Total Resource-Owning TCB MVS Waits Issued
98 (152)	T6FCOCPU	04 - K	Concurrent TCB CPU Time
9C (156)	T6FCOWTT	04 - K	Total Concurrent TCB MVS Wait Time
A0 (160)	T6FCOWTC	04 - K	Number of Concurrent TCB MVS Waits Issued
A4 (164)	T6FESHWM	04 - B	Extended DSA High-Water Mark in Pages Includes ECDSA, ESDSA, and EUDSA.
A8 (168)	T6FMAXT	04 - B	Maximum Tasks Value
AC (172)	T6FCURT	04 - B	Current Tasks
B0 (176)	T6FHWMT	04 - B	High-Water Mark Tasks
B4 (180)	T6TMTT	04 - B	Times at High-Water Mark
B8 (184)	T6FOSCR	04 - B	OSCOR (allocated region below the line)
BC (188)	T6FOSCRE	04 - B	OSCOR Extended (allocated region above the line)
C0 (192)			End of Record

DL/I Record (DLZ - Type CD)

The DL/I record is applicable only when local DL/I is installed. This record is not available with DBCTL. A CICS DBCTL statistical record is written if DBCTL terminates or if CICS terminates normally.

Table 73. DL/I Records: Type CD

Type of Information	Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
General	1C (28)	DLZPSBC	04 - B	Number of PSBs in System
	20 (32)	DLZPSTC	04 - B	Number of PSTs in System
	24 (36)	DLZDBDC	04 - B	Number of DBDs in System
	28 (40)	DLZMINTK	04 - B	Minimum Task Count
	2C (44)	DLZMAXC	04 - B	Maximum Task Count
	30 (48)	DLZACTC	04 - B	High-Water Mark Concurrent Threads in Use
	34 (52)	DLZSUSP	04 - B	Suspended Task Count
	38 (56)	DLZSCHCL	04 - B	Always Binary Zeroes (0)
	3C (60)	DLZDPPSB	04 - B	Always Binary Zeroes (0)
	40 (64)	DLZTAMAX	04 - B	Number of Waits for DL/I Thread
	44 (68)	DLZDEADL	04 - B	Always Binary Zeroes (0)
Buffer Mgmt	48 (72)	DLZRREQ	04 - B	Always Binary Zeroes (0)
	4C (76)	DLZRRSAT	04 - B	Number of Read Requests Satisfied within Buffer
	50 (80)	DLZREAD	04 - B	Number of Input Type EXCPs
	54 (84)	DLZBAREQ	04 - B	Number of Buffer Alter Requests
	58 (88)	DLZWRITE	04 - B	Number of Output EXCPs
	5C (92)	DLZGU	04 - B	Get Unique Count
	60 (96)	DLZGN	04 - B	Get Next Count
	64 (100)	DLZIOERR	04 - B	Number of I/O Errors
Definition	68 (104)	DLZDMBMU	04 - B	High-Water Mark Bytes Used in DMB Pool
	6C (108)	DLZPSBMU	04 - B	High-Water Mark Bytes Used in PSB Pool
	70 (112)	DLZENQMU	04 - B	High-Water Mark Bytes Used in ENQ Pool
	74 (116)	DLZTHRDM	02 - B	High-Water Mark Concurrent Threads in Use
	76 (118)	DLZDMBEX	04 - B	Number of Waits for DMB Pool Space
	7A (122)	DLZPSBEX	04 - B	Number of waits for PSB Pool Space
	7E (126)	DLZTHRDW	04 - B	Number of Waits for DL/I Thread

Table 73. DL/I Records: Type CD (Continued)

Type of Information	Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
	82 (130)		08	Reserved for Future Use
	8A (138)			End of Record

Glossary

This glossary defines BMC Software terminology. Other dictionaries and glossaries can be used in conjunction with this glossary.

Since this glossary pertains to BMC Software-related products, some of the terms defined might not appear in this book.

To help you find the information you need, this glossary uses the following cross-references:

Contrast with indicates a term that has a contrary or contradictory meaning.

See indicates an entry that is a synonym or contains expanded information.

See also indicates an entry that contains related information.

action
Defined operation, such as modifying a MAINVIEW window, that is performed in response to a command. *See* object.

active window
Any MAINVIEW window in which data can be refreshed. *See* alternate window, current window, window.

administrative view
Display from which a product's management tasks are performed, such as the DSLIST view for managing historical data sets. *See* view.

ALT WIN field
Input field that allows you to specify the window identifier for an alternate window where the results of a hyperlink are displayed. *See* alternate window.

Alternate Access
See MAINVIEW Alternate Access.

alternate form
View requested through the FORM command that changes the format of a previously displayed view to show related information. *See also* form, query.

alternate window (1) Window that is specifically selected to display the results of a hyperlink. (2) Window whose identifier is defined to the ALT WIN field. *Contrast with* current window. *See* active window, window, ALT WIN field.

analyzer (1) Online display that presents a snapshot of status and activity data and indicates problem areas. (2) Component of CMF MONITOR. *See* CMF MONITOR Analyzer.

application (1) Program that performs a specific set of tasks within a MAINVIEW product. (2) In MAINVIEW VistaPoint, combination of workloads to enable display of their transaction performance data in a single view.

application trace *See* trace.

ASCH workload Workload comprising Advanced Program-to-Program Communication (APPC) address spaces.

AutoCustomization Online facility for customizing the installation of products. AutoCustomization provides an ISPF panel interface that both presents customization steps in sequence and provides current status information about the progress of the installation.

automatic screen update
Usage mode wherein the currently displayed screen is refreshed automatically with new data at an interval you specify. Invoked by the ASU command.

batch workload Workload consisting of address spaces running batch jobs.

BBI Basic architecture that distributes work between workstations and multiple OS/390 targets for BMC Software MAINVIEW products.

BBI-SS PAS *See* BBI subsystem product address space.

BBI subsystem product address space (BBI-SS PAS)
OS/390 subsystem address space that manages communication between local and remote systems and that contains one or more of the following products:

- MAINVIEW AutoOPERATOR
- MAINVIEW for CICS
- MAINVIEW for DB2
- MAINVIEW for DBCTL
- MAINVIEW for IMS Online
- MAINVIEW for MQSeries (formerly Command MQ for S/390)
- MAINVIEW SRM
- MAINVIEW VistaPoint (for CICS, DB2, DBCTl, and IMS workloads)

BBPARM *See* parameter library.

BBPROC	*See* procedure library.
BBPROF	*See* profile library.
BBSAMP	*See* sample library.
BBV	*See* MAINVIEW Alternate Access.
BBXS	BMC Software Subsystem Services. Common set of service routines loaded into common storage and used by several BMC Software MAINVIEW products.
border	Visual indication of the boundaries of a window.
bottleneck analysis	Process of determining which resources have insufficient capacity to provide acceptable service levels and that therefore can cause performance problems.
CA-Disk	Data management system by Computer Associates that replaced the DMS product.
CAS	Coordinating address space. One of the address spaces used by the MAINVIEW windows environment architecture. The CAS supplies common services and enables communication between linked systems. Each OS/390 or z/OS image requires a separate CAS. Cross-system communication is established through the CAS using VTAM and XCF communication links.
CFMON	*See* coupling facility monitoring.
chart	Display format for graphical data. *See also* graph.
CICSplex	User-defined set of one or more CICS systems that are controlled and managed as a single functional entity.
CMF MONITOR	Comprehensive Management Facility MONITOR. Product that measures and reports on all critical system resources, such as CPU, channel, and device usage; memory, paging, and swapping activity; and workload performance.

CMF MONITOR Analyzer
Batch component of CMF MONITOR that reads the SMF user and 70 series records created by the CMF MONITOR Extractor and/or the RMF Extractor and formats them into printed system performance reports.

CMF MONITOR Extractor
Component of CMF that collects performance statistics for CMF MONITOR Analyzer, CMF MONITOR Online, MAINVIEW for OS/390, and RMF postprocessor. *See* CMF MONITOR Analyzer, CMF MONITOR Online, MAINVIEW for OS/390.

CMF MONITOR Online

Component of CMF that uses the MAINVIEW window interface to present data on all address spaces, their use of various system resources, and the delays that each address space incurs while waiting for access to these resources. *See* CMF MONITOR, MAINVIEW for OS/390.

CMF Type 79 API   Application programming interface, provided by CMF, that provides access to MAINVIEW SMF-type 79 records.

CMFMON   Component of CMF MONITOR that simplifies online retrieval of information about system hardware and application performance and creates MAINVIEW SMF-type 79 records.

The CMFMON *online facility* can be used to view data in one or more formatted screens.

The CMFMON *write facility* can be used to write collected data as MAINVIEW SMF-type 79 records to an SMF or sequential data set.

CMRDETL   MAINVIEW for CICS data set that stores detail transaction records (type 6E) and abend records (type 6D). Detail records are logged for each successful transaction. Abend records are written when an abend occurs. Both records have the same format when stored on CMRDETL.

CMRSTATS   MAINVIEW for CICS data set that stores both CICS operational statistic records, at five-minute intervals, and other records, at intervals defined by parameters specified during customization (using CMRSOPT).

column   Vertical component of a view or display, typically containing fields of the same type of information, that varies by the objects associated in each row.

collection interval   Length of time data is collected. *See also* delta mode, total mode.

command delimiter   Special character, usually a **;** (semicolon), used to stack commands typed concurrently on the COMMAND line for sequential execution.

COMMAND line   Line in the control area of the display screen where primary commands can be typed. *Contrast with* line command column.

Command MQ Automation D/S

Command MQ agents, which provide local proactive monitoring for both MQSeries and MSMQ (Microsoft message queue manager). The Command MQ agents operate at the local node level where they continue to perform functions regardless of the availability of the MQM (message queue manager) network. Functionality includes automatic monitoring and restarts of channels, queue managers, queues and command servers. In cases where automated recovery is not possible, the agents transport critical alert information to a central console.

Command MQ Automation S/390

Command MQ component, which monitors the MQM (message queue manager) networks and intercedes to perform corrective actions when problems arise. Solutions include:

- Dead-Letter Queue management
- System Queue Archival
- Service Interval Performance solutions
- Channel Availability

These solutions help ensure immediate relief to some of the most pressing MQM operations and performance problems.

Command MQ for D/S

Command MQ for D/S utilizes a true client/server architecture and employs resident agents to provide configuration, administration, performance monitoring and operations management for the MQM (message queue manager) network.

Command MQ for S/390

See MAINVIEW for MQSeries.

COMMON STORAGE MONITOR

Component of MAINVIEW for OS/390 that monitors usage and reconfigures OS/390 or z/OS common storage blocks.

composite workload

Workload made up of a WLM workload or other workloads, which are called *constituent workloads.*

constituent workload

Member of a composite workload. Constituent workloads in a composite usually belong to a single workload class, but sometimes are mixed.

contention

Occurs when there are more requests for service than there are servers available.

context

In a Plex Manager view, field that contains the name of a target or group of targets specified with the CONTEXT command. *See* scope, service point, SSI context, target context.

CONTEXT command

Specifies either a MAINVIEW product and a specific target for that product (*see* target context) or a MAINVIEW product and a name representing one or more targets (*see* SSI context) for that product.

control statement   (1) Statement that interrupts a sequence of instructions and transfers control to another part of the program. (2) Statement that names samplers and other parameters that configure the MAINVIEW components to perform specified functions. (3) In CMF MONITOR, statement in a parameter library member used to identify a sampler in the extractor or a report in the analyzer, or to describe either component's processing requirements to the operating system.

coupling facility monitoring (CFMON)
   Coupling facility views that monitor the activity of your system's coupling facilities.

current data   Data that reflects the system in its current state. The two types of current data are real-time data and interval data. *Contrast with* historical data. *See also* interval data, real-time data.

current window   In the MAINVIEW window environment, window where the main dialog with the application takes place. The current window is used as the default window destination for commands issued on the COMMAND line when no window number is specified. *Contrast with* alternate window. *See* active window, window.

DASD   (Direct Access Storage Device) (1) A device with rotating recording surfaces that provides immediate access to stored data. (2) Any device that responds to a DASD program.

DASD ADVISOR   An interactive software tool that diagnoses DASD performance problems and makes recommendations to reduce overall service time. This tool measures and reports on the operational performance of IBM and IBM-compatible devices.

data collector   Program that belongs to a MAINVIEW product and that collects data from various sources and stores the data in records used by views. For example, MAINVIEW for OS/390 data collectors obtain data from OS/390 or z/OS services, OS/390 or z/OS control blocks, CMF MONITOR Extractor control blocks, and other sources. *Contrast with* extractor.

delta mode   (1) In MAINVIEW for DB2 analyzer displays, difference between the value sampled at the start of the current statistics interval and the value sampled by the current analyzer request. *See also* statistics interval. (2) In CMFMON, usage mode wherein certain columns of data reflect the difference in values between one sample cycle and the next. Invoked by the DELta ON command. *See also* collection interval, sample cycle, total mode.

DFSMS   (Data Facility Storage Management System) Data management, backup, and HSM software from IBM for OS/390 or z/OS mainframes.

DMR   *See* MAINVIEW for DB2.

DMS	(Data Management System) *See* CA-Disk.
DMS2HSM	*See* MAINVIEW SRM DMS2HSM.
DSO	(Data Set Optimizer) CMF MONITOR Extractor component that uses CMF MONITOR Extractor data to produce reports specifying the optimal ordering of data sets on moveable head devices.
EasyHSM	*See* MAINVIEW SRM EasyHSM.
EasyPOOL	*See* MAINVIEW SRM EasyPOOL.
EasySMS	*See* MAINVIEW SRM EasySMS.
element	(1) Data component of a data collector record, shown in a view as a field. (2) Internal value of a field in a view, used in product functions.
element help	Online help for a field in a view. The preferred term is *field help*.
Enterprise Storage Automation	
	See MAINVIEW SRM Enterprise Storage Automation.
event	A message issued by Enterprise Storage Automation. User-defined storage occurrences generate events in the form of messages. These events provide an early warning system for storage problems and are routed to user-specified destinations for central viewing and management.
Event Collector	Component for MAINVIEW for IMS Online, MAINVIEW for IMS Offline, and MAINVIEW for DBCTL that collects data about events in the IMS environment. This data is required for Workload Monitor and optional for Workload Analyzer (except for the workload trace service). This data also is recorded as transaction records (X'FA') and program records (X'F9') on the IMS system log for later use by the MAINVIEW for IMS Offline components: Performance Reporter and Transaction Accountant.
expand	Predefined link from one display to a related display. *See also* hyperlink.
extractor	Program that collects data from various sources and keeps the data control blocks to be written as records. Extractors obtain data from services, control blocks, and other sources. *Contrast with* data collector.
extractor interval	*See* collection interval.
fast path	Predefined link between one screen and another. To use the fast path, place the cursor on a single value in a field and press **Enter**. The resulting screen displays more detailed information about the selected value. *See also* hyperlink.

field	Group of character positions within a screen or report used to type or display specific information.
field help	Online help describing the purpose or contents of a field on a screen. To display field help, place the cursor anywhere in a field and press **PF1** (HELP). In some products, field help is accessible from the screen help that is displayed when you press **PF1**.
filter	Selection criteria used to limit the number of rows displayed in a view. Data that does not meet the selection criteria is not displayed. A filter is composed of an element, an operator, and an operand (a number or character string). Filters can be implemented in view customization, through the PARm/QPARm commands, or through the Where/QWhere commands. Filters are established against elements of data.
fire	The term used to indicate that an event has triggered an action. In MAINVIEW AutoOPERATOR, when a rule selection criteria matches an incoming event and *fires*, the user-specified automation actions are performed. This process is also called *handling* the event.
fixed field	Field that remains stationary at the left margin of a screen that is scrolled either right or left.
FOCAL POINT	MAINVIEW product that displays a summary of key performance indicators across systems, sites, and applications from a single terminal.
form	One of two constituent parts of a view; the other is query. A form defines how the data is presented; a query identifies the data required for the view. *See also* query, view.
full-screen mode	Display of a MAINVIEW product application or service on the entire screen. There is no window information line. *Contrast with* windows mode.
global command	Any MAINVIEW window interface command that can affect all windows in the window area of a MAINVIEW display.
graph	Graphical display of data that you select from a MAINVIEW window environment view. *See also* chart.
hilevel	For MAINVIEW products, high-level data set qualifier required by a site's naming conventions.
historical data	(1) Data that reflects the system as it existed at the end of a past recording interval or the duration of several intervals. (2) Any data stored in the historical database and retrieved using the TIME command. *Contrast with* current data, interval data and real-time data.

historical database Collection of performance data written at the end of each installation-defined recording interval and containing up to 100 VSAM clusters. Data is extracted from the historical database with the TIME command. *See* historical data.

historical data set In MAINVIEW products that display historical data, VSAM cluster file in which data is recorded at regular intervals.

HSM (Hierarchical Storage Management) Automatic movement of files from hard disk to slower, less-expensive storage media. The typical hierarchy is from magnetic disk to optical disk to tape.

hyperlink (1) Preset field in a view or an EXPAND line on a display that permits you to

- access cursor-sensitive help
- issue commands
- link to another view or display

The transfer can be either within a single product or to a related display/view in a different BMC Software product. Generally, hyperlinked fields are highlighted. (2) Cursor-activated short path from a topic or term in online help to related information. *See also* fast path.

Image log Collection of screen-display records. Image logs can be created for both the BBI-SS PAS and the BBI terminal session (TS).

The BBI-SS PAS Image log consists of two data sets that are used alternately: as one fills up, the other is used. Logging to the BBI-SS PAS Image log stops when both data sets are filled and the first data set is not processed by the archive program.

The TS Image log is a single data set that wraps around when full.

IMSPlex System Manager (IPSM)
MVIMS Online and MVDBC service that provides Single System Image views of resources and bottlenecks for applications across one or more IMS regions and systems.

interval data Cumulative data collected during a collection interval. Intervals usually last from 15 to 30 minutes depending on how the recording interval is specified during product customization. *Contrast with* historical data.

Note: If change is made to the workloads, a new interval will be started.

See also current data and real-time data.

InTune Product for improving application program performance. It monitors the program and provides information used to reduce bottlenecks and delays.

IRUF	IMS Resource Utilization File (IRUF). IRUFs can be either detail (one event, one record) or summarized (more than one event, one record). A detail IRUF is created by processing the IMS system log through a program called IMFLEDIT. A summarized IRUF is created by processing one or more detail IRUFs, one or more summarized IRUFs, or a combination of both, through a sort program and the TASCOSTR program.
job activity view	Report about address space consumption of resources. *See* view.
journal	Special-purpose data set that stores the chronological records of operator and system actions.
Journal log	Collection of messages. Journal logs are created for both the BBI-SS PAS and the BBI terminal session (TS).
	The BBI-SS PAS Journal log consists of two data sets that are used alternately: as one fills up, the other is used. Logging to the BBI-SS PAS Journal log stops when both data sets are filled and the first data set is not being processed by the archive program.
	The TS Journal log is a single data set that wraps around when full.
line command	Command that you type in the line command column in a view or display. Line commands initiate actions that apply to the data displayed in that particular row.
line command column	
	Command input column on the left side of a view or display. *Contrast with* COMMAND line.
Log Edit	In the MAINVIEW for IMS Offline program named IMFLEDIT, function that extracts transaction (X'FA') and program (X'F9') records from the IMS system log. IMFLEDIT also extracts certain records that were recorded on the system log by IMS. IMFLEDIT then formats the records into a file called the IMS Resource Utilization File (IRUF).
MAINVIEW	BMC Software integrated systems management architecture.
MAINVIEW Alarm Manager (MV ALARM)	
	In conjunction with other MAINVIEW products, notifies you when an exception occurs. MAINVIEW Alarm Manager is capable of monitoring multiple systems simultaneously, which means that MAINVIEW Alarm Manager installed on one system keeps track of your entire sysplex. You can then display a single view that shows exceptions for all MAINVIEW performance monitors within your OS/390 or z/OS enterprise.

MAINVIEW Alternate Access
Enables MAINVIEW products to be used without TSO by providing access through EXCP and VTAM interfaces.

MAINVIEW Application Program Interface (MVAPI)
A CLIST- or REXX-based, callable interface that allows MAINVIEW AutoOPERATOR EXECs to access MAINVIEW monitor product view data.

MAINVIEW AutoOPERATOR
Product that uses tools, techniques, and facilities to automate routine operator tasks and provide online performance monitoring, and that achieves high availability through error minimization, improved productivity, and problem prediction and prevention.

MAINVIEW control area
In the MAINVIEW window environment, first three lines at the top of the view containing the window information line and the COMMAND, SCROLL, CURR WIN, and ALT WIN lines. The control area cannot be customized and is part of the information display. *Contrast with* MAINVIEW display area, MAINVIEW window area.

MAINVIEW Desktop Version of the MAINVIEW window interface designed to run on OS/2 and Windows workstations.

MAINVIEW display area
See MAINVIEW window area.

MAINVIEW Explorer Product that provides access to MAINVIEW products from a Web browser running under Windows. MAINVIEW Explorer replaces MAINVIEW Desktop.

MAINVIEW for CICS Product (formerly MV MANAGER for CICS) that provides real-time application performance analysis and monitoring for CICS system management.

MAINVIEW for DB2 Product (formerly MV MANAGER for DB2) that provides real-time and historical application performance analysis and monitoring for DB2 subsystem management.

MAINVIEW for DBCTL (MVDBC)
Product that provides real-time application performance analysis and monitoring for DBCTL management.

MAINVIEW for IMS (MVIMS) Offline
Product with a Performance Reporter component that organizes data and prints reports used to analyze IMS performance and a Transaction Accountant component that produces cost accounting and user charge-back records and reports.

MAINVIEW for IMS (MVIMS) Online

Product that provides real-time application performance analysis and monitoring for IMS management.

MAINVIEW for IP Product that monitors OS/390 and z/OS mission-critical application performance as it relates to IP stack usage. Collected data includes: connections, response time statistics, application availability, application throughput, and IP configuration.

MAINVIEW for Linux–Servers

Product that allows you to monitor the performance of your Linux systems from the MAINVIEW windows interface.

MAINVIEW for MQSeries (formerly known as Command MQ for S/390)

Delivers comprehensive capabilities for configuration, administration, performance monitoring and operations management for an entire MQM (message queue manager) network.

MAINVIEW for OS/390

System management application (known as MAINVIEW for MVS prior to version 2.5). Built upon the MAINVIEW window environment architecture, it uses the window interface to provide access to system performance data and other functions necessary in the overall management of an enterprise.

MAINVIEW for UNIX System Services

System management application that allows you to monitor the performance of the Unix System Services from a MAINVIEW window interface.

MAINVIEW for VTAM

Product that displays application performance data by application, transaction ID, and LU name. This collected data includes connections, response time statistics, application availability, and application throughput.

MAINVIEW for WebSphere

Product that provides Web monitoring and management for applications integrated with IBM WebSphere Application Server for OS/390 or z/OS.

MAINVIEW Selection Menu

ISPF selection panel that provides access to all MAINVIEW windows-mode and full-screen mode products.

MAINVIEW SRM *See* MAINVIEW Storage Resource Manager (SRM).

MAINVIEW SRM DMS2HSM

Product that facilitates the conversion of CA-Disk, formerly known as DMS, to HSM.

MAINVIEW SRM EasyHSM

Product that provides online monitoring and reporting to help storage managers use DFHSM efficiently.

MAINVIEW SRM EasyPOOL

Product that provides control over data set allocation and enforcement of allocation and naming standards. EasyPOOL functions operate at the operating system level to intercept normal job processing, thus providing services without any JCL changes.

MAINVIEW SRM EasySMS

Product that provides tools that aid in the conversion to DFSMS and provides enhancement to the DFSMS environment after implementation. EasySMS consists of the EasyACS functions, the SMSACSTE function, and the Monitoring and Positioning Facility.

MAINVIEW SRM Enterprise Storage Automation

Product that delivers powerful event generation and storage automation technology across the storage enterprise. Used in conjunction with MAINVIEW AutoOPERATOR, automated solutions to perform pool, volume, application, or data set-level manipulation can be created and used in response to any condition or invoked to perform ad hoc requests.

MAINVIEW SRM SG-Auto

Product that provides early warning notification of storage anomalies and automated responses to those anomalies based on conditions in the storage subsystem.

MAINVIEW SRM SG-Control

Product that provides real-time monitoring, budgeting, and control of DASD space utilization.

MAINVIEW SRM StopX37/II

Product that provides enhancements to OS/390 or z/OS space management, reducing the incidence of space-related processing problems. The StopX37/II functions operate at the system level to intercept abend conditions or standards violations, thus providing services without any JCL changes.

MAINVIEW SRM StorageGUARD

Product that monitors and reports on DASD consumption and provides historical views to help control current and future DASD usage.

MAINVIEW Storage Resource Manager (SRM)

Suite of products that assist in all phases of OS/390 or z/OS storage management. MAINVIEW SRM consists of products that perform automation, reporting, trend analysis, and error correction for storage management.

MAINVIEW SYSPROG Services
        See SYSPROG services.

MAINVIEW VistaPoint
        Product that provides enterprise-wide views of performance. Application and workload views are available for CICS, DB2, DBCTL, IMS, OS/390, or z/OS. Data is summarized at the level of detail needed; for example, views can be for a single target, an OS/390 or z/OS image, or an entire enterprise.

MAINVIEW window area
        Portion of the information display that is not the control area and in which views are displayed and windows opened. It includes all but the first three lines of the information display. *Contrast with* MAINVIEW control area.

monitor
        Online service that measures resources or workloads at user-defined intervals and issues warnings when user-defined thresholds are exceeded.

Multi-Level Automation (MLA)
        The user-defined, multiple step process in Enterprise Storage Automation that implements solutions in a tiered approach, where solutions are invoked one after another until the condition is resolved.

MVALARM
        See MAINVIEW Alarm Manager.

MVAPI
        See MAINVIEW Application Program Interface.

MVCICS
        See MAINVIEW for CICS.

MVDB2
        See MAINVIEW for DB2.

MVDBC
        See MAINVIEW for DBCTL.

MVIMS
        See MAINVIEW for IMS.

MVIP
        See MAINVIEW for IP.

MVLNX
        See MAINVIEW for Linux–Servers.

MVMQ
        See MAINVIEW for MQSeries.

MVMVS
        See MAINVIEW for OS/390.

MVScope
        MAINVIEW for OS/390 application that traces both CPU usage down to the CSECT level and I/O usage down to the channel program level.

MVSRM
        See MAINVIEW Storage Resource Manager (SRM).

MVSRMHSM
        See MAINVIEW SRM EasyHSM.

MVSRMSGC	*See* MAINVIEW SRM SG-Control.
MVSRMSGD	*See* MAINVIEW SRM StorageGUARD.
MVSRMSGP	*See* MAINVIEW SRM StorageGUARD.
MVUSS	*See* MAINVIEW for UNIX System Services.
MVVP	*See* MAINVIEW VistaPoint.
MVVTAM	*See* MAINVIEW for VTAM.
MVWEB	*See* MAINVIEW for WebSphere.
nested help	Multiple layers of help pop-up windows. Each successive layer is accessed by clicking a hyperlink from the previous layer.
object	Anything you can manipulate as a single unit. MAINVIEW objects can be any of the following: product, secondary window, view, row, column, or field.
	You can issue an action against an object by issuing a line command in the line command column to the left of the object. *See* action.
OMVS workload	Workload consisting of OS/390 OpenEdition address spaces.
online help	Help information that is accessible online.

OS/390 and z/OS Installer
BMC Software common installation system for mainframe products.

OS/390 product address space (PAS)
Address space containing OS/390 or z/OS data collectors, including the CMF MONITOR Extractor. Used by MAINVIEW for OS/390, MAINVIEW for UNIX System Services, and CMF MONITOR products. *See* PAS.

parameter library	Data set consisting of members that contain parameters for specific MAINVIEW products or a support component There can be several versions:

- the distributed parameter library, called BBPARM
- a site-specific parameter library or libraries

These can be

- a library created by AutoCustomization, called UBBPARM
- a library created manually, with a unique name

PAS   Product address space. Used by the MAINVIEW products. Contains data collectors and other product functions. *See also* OS/390 product address space (PAS) *and* BBI subsystem product address space (BBI-SS PAS).

performance group workload

Collection of address spaces defined to OS/390 or z/OS. If you are running OS/390 or z/OS with WLM in compatibility mode, MAINVIEW for OS/390 creates a performance group workload instead of a service class.

PERFORMANCE MANAGER

MAINVIEW for CICS online service for monitoring and managing current performance of CICS regions.

Performance Reporter (MVIMS)

MVIMS Offline component that organizes data and prints reports that can be used to analyze IMS performance.

Performance Reporter

Product component that generates offline batch reports. The following products can generate these reports:

- MAINVIEW for DB2
- MAINVIEW for CICS

Plex Manager   Product through which cross-system communication, MAINVIEW security, and an SSI context are established and controlled. Plex Manager is shipped with MAINVIEW window environment products as part of the coordinating address space (CAS) and is accessible as a menu option from the MAINVIEW Selection Menu.

pop-up display   Full-screen panel that displays additional information about a selected event in a detail trace.

pop-up window   Window containing help information that, when active, overlays part of the window area. A pop-up window is displayed when you issue the HELP command while working in windows-mode.

PRGP workload   In MVS/SP 5.0 or earlier, or in compatibility mode in MVS/SP 5.1 or later, composite of service classes. MAINVIEW for OS/390 creates a performance group workload for each performance group defined in the current IEAIPS*xx* member.

procedure library   Data set consisting of members that contain executable procedures used by MAINVIEW AutoOPERATOR. These procedures are execute command lists (EXECs) that automate site functions. There can be several versions:

- the distributed parameter library, called BBPROC
- a site-specific parameter library or libraries

These can be

- a library created by AutoCustomization, called UBBPROC
- a library created manually, with a unique name

The site-created EXECs can be either user-written or customized MAINVIEW AutoOPERATOR-supplied EXECs from BBPROC.

product address space
    See PAS.

profile library   Data set consisting of members that contain profile information and cycle refresh definitions for a terminal session connected to a BBI-SS PAS. Other members are dynamically created by MAINVIEW applications. There can be several versions:

- the distributed profile library, called BBPROF
- a site-specific profile library or libraries

These can be

- a library created by AutoCustomization, called SBBPROF
- a library created manually, with a unique name

The site library is a common profile shared by all site users. The terminal session CLIST creates a user profile automatically if one does not exist; it is called userid.BBPROF, where userid is your logon ID. User profile libraries allow each user to specify unique PF keys, CYCLE commands, target system defaults, a Primary Option Menu, and a unique set of application profiles.

query   One of two constituent parts of a view; the other is form. A query defines the data for a view; a form defines the display format. *See also* form, view.

real-time data   Performance data as it exists at the moment of inquiry. Real-time data is recorded during the smallest unit of time for data collection. *Contrast with* historical data. *See also* current data and interval data.

Resource Analyzer   Online real-time displays used to analyze IMS resources and determine which are affected by specific workload problems.

Resource Monitor   Online data collection services used to monitor IMS resources and issue warnings when defined utilization thresholds are exceeded.

row   (1) Horizontal component of a view or display comprising all the fields pertaining to a single device, address space, user, and so on. (2) Horizontal component of a DB2 table consisting of a sequence of values, one for each column of the table.

RxD2   Product that provides access to DB2 from REXX. It provides tools to query the DB2 catalog, issue dynamic SQL, test DB2 applications, analyze EXPLAIN data, generate DDL or DB2 utility JCL, edit DB2 table spaces, perform security administration, and much more.

sample cycle   Time between data samples.

For the CMF MONITOR Extractor, this is the time specified in the extractor control statements (usually 1 to 5 seconds).

For real-time data, the cycle is not fixed. Data is sampled each time you press **Enter**.

sample library   Data set consisting of members each of which contains one of the following items:

- sample JCL that can be edited to perform specific functions
- macro that is referenced in the assembly of user-written services
- sample user exit routine

There can be several versions:

- the distributed sample library, called BBSAMP
- a site-specific sample library or libraries

These can be

- a library created by AutoCustomization, called UBBSAMP
- a library created manually, with a unique name

sampler   Program that monitors a specific aspect of system performance. Includes utilization thresholds used by the Exception Monitor. The CMF MONITOR Extractor contains samplers.

SBBPROF   *See* profile library.

scope   Subset of an SSI context. The scope could be all the data for the context or a subset of data within the context. It is user- or site-defined. *See* SSI context, target.

screen definition   Configuration of one or more views that have been stored with the SAVEScr command and assigned a unique name. A screen includes the layout of the windows and the view, context, system, and product active in each window.

selection view   In MAINVIEW products, view displaying a list of available views.

service class workload

Collection of address spaces defined to OS/390 or z/OS. If you are running Workload Manager (WLM) in goal mode, MAINVIEW for OS/390 creates a service class workload for each service class that you define through WLM definition dialogs.

If you are running MVS 4.3 or earlier, or MVS/SP 5.1 or later with WLM in compatibility mode, OS/390 creates a performance group workload instead of a service class. *See* performance group workload.

service objective   Workload performance goal, specified in terms of response time for TSO workloads or turnaround time for batch workloads. Performance group workloads can be measured by either objective. Composite workload service objectives consist of user-defined weighting factors assigned to each constituent workload. For compatibility mode, neither OS/390 nor z/OS provides any way to measure service.

service point   Specification, to MAINVIEW, of the services required to enable a specific product. Services can be actions, selectors, or views. Each target (for example, CICS, DB2, or IMS) has its own service point.

The PLEX view lists all the defined service points known to the CAS to which the terminal session is connected.

service request block (SRB)

Control block that represents a routine to be dispatched. SRB mode routines generally perform work for the operating system at a high priority. An SRB is similar to a task control block (TCB) in that it identifies a unit of work to the system. *See also* task control block.

service select code   Code entered to invoke analyzers, monitors, and general services. This code is also the name of the individual service.

session   Total period of time an address space has been active. A session begins when monitoring can be performed. If the product address space (PAS) starts after the job, the session starts with the PAS.

SG-Auto   *See* MAINVIEW SRM SG-Auto.

SG-Control   *See* MAINVIEW SRM SG-Control.

single system image (SSI)

Feature of the MAINVIEW window environment architecture where you can view and perform actions on multiple OS/390or z/OS systems as though they were a single system. The rows of a single tabular view can contain rows from different OS/390 or z/OS images.

Skeleton Tailoring Facility

A facility in MAINVIEW AutoOPERATOR that allows skeleton JCL to be used during job submission. Skeleton JCL can contain variables within the JCL statements to be substituted with data values at job submission time. Directive statements can be used in the skeleton JCL to cause the repetition of a set of skeleton statements. This facility functions similar to the TSO skeleton tailoring facility**.**

SRB *See* service request block.

SSI *See* single system image.

SSI context Name created to represent one or more targets for a given product. *See* context, target.

started task workload

Address spaces running jobs that were initiated programmatically.

statistics interval For MAINVIEW for DB2, cumulative count within a predefined interval (30-minute default set by the DB2STATS parameter in the distributed BBPARM member BBIISP00) for an analyzer service DELTA or RATE display. Specifying the DELTA parameter displays the current value as the difference between the value sampled by the current analyzer request and the value sampled at the start of the current interval. Specifying the RATE parameter displays the current value by minute (DELTA divided by the number of elapsed minutes).

stem variables A REXX facility, supported in MAINVIEW AutoOPERATOR REXX EXECs and the Skeleton Tailoring Facility, where variable names end with a period followed by a number, such as &POOL.1. This configuration allows each variable to actually represent a table or array of data, with the zero variable containing the number of entries in the array. For example, &POOL.0 = 5 would indicate variables &POOL.1 through &POOL.5 exist.

StopX37/II *See* MAINVIEW SRM StopX37/II.

StorageGUARD *See* MAINVIEW SRM StorageGUARD.

summary view View created from a tabular view using the Summarize option in view customization. A summary view compresses several rows of data into a single row based on the summarize criteria.

SYSPROG services   Component of MAINVIEW for OS/390. Over 100 services that detect, diagnose, and correct OS/390 or z/OS system problems as they occur. Accessible from the OS/390 Performance and Control Main Menu. Note that this component is also available as a stand-alone product MAINVIEW SYSPROG Services.

system resource   *See* object.

target   Entity monitored by one or more MAINVIEW products, such as an OS/390 or z/OS image, an IMS or DB2 subsystem, a CICS region, or related workloads across systems. *See* context, scope, SSI context.

target context   Single target/product combination. *See* context.

TASCOSTR   MAINVIEW for IMS Offline program that summarizes detail and summary IMS Resource Utilization Files (IRUFs) to be used as input to the offline components.

task control block (TCB)

Address space-specific control block that represents a unit of work that is dispatched in the address space in which it was created. *See also* service request block.

TCB   *See* task control block.

terminal session (TS)

Single point of control for MAINVIEW products, allowing data manipulation and data display and providing other terminal user services for MAINVIEW products. The terminal session runs in a user address space (either a TSO address space or a stand-alone address space for EXCP/VTAM access).

TDIR   *See* trace log directory.

threshold   Specified value used to determine whether the data in a field meets specific criteria.

TLDS   *See* trace log data set.

total mode   Usage mode in CMFMON wherein certain columns of data reflect the cumulative value between collection intervals. Invoked by the DELta OFF command. *See also* collection interval, delta mode.

trace   (1) Record of a series of events chronologically listed as they occur. (2) Online data collection and display services that track transaction activity through DB2, IMS, or CICS.

trace log data set (TLDS)
Single or multiple external VSAM data sets containing summary or detail trace data for later viewing or printing. The trace log(s) can be defined as needed or dynamically allocated by the BBI-SS PAS. Each trace request is assigned its own trace log data set(s).

trace log directory (TDIR)
VSAM linear data set containing one entry for each trace log data set. Each entry indicates the date and time of data set creation, the current status of the data set, the trace target, and other related information.

transaction   Specific set of input data that initiates a predefined process or job.

Transaction Accountant
MVIMS Offline component that produces cost accounting and user charge-back records and reports.

TS   *See* terminal session.

TSO workload   Workload that consists of address spaces running TSO sessions.

UAS   *See* user address space.

UBBPARM   *See* parameter library.

UBBPROC   *See* procedure library.

UBBSAMP   *See* sample library.

user address space
Runs a MAINVIEW terminal session (TS) in TSO, VTAM, or EXCP mode.

User BBPROF   *See* profile library.

view   Formatted data within a MAINVIEW window, acquired from a product as a result of a view command or action. A view consists of two parts: query and form. *See also* form, job activity view, query.

view definition   Meaning of data that appears online, including source of data, selection criteria for data field inclusion and placement, data format, summarization, context, product, view name, hyperlink fields, and threshold conditions.

view command   Name of a view that you type on the COMMAND line to display that view.

view command stack
Internal stack of up to 10 queries. For each command, the stack contains the filter parameters, sort order, context, product, and time frame that accompany the view.

view help   Online help describing the purpose of a view. To display view help, place the cursor on the view name on the window information line and press **PF1** (HELP).

window   Area of the MAINVIEW screen in which views and resources are presented. A window has visible boundaries and can be smaller than or equal in size to the MAINVIEW window area. *See* active window, alternate window, current window, MAINVIEW window area.

window information line
                         Top border of a window. Shows the window identifier, the name of the view displayed in the window, the system, the scope, the product reflected by the window, and the tomfooleries for which the data in the window is relevant. *See also* window status field.

window number   Sequential number assigned by MAINVIEW to each window when it is opened. The window number is the second character in the window status field. *See also* window status field.

window status   One-character letter in the window status field that indicates when a window is ready to receive commands, is busy processing commands, is not to be updated, or contains no data. It also indicates when an error has occurred in a window. The window status is the first character in the window status field. *See also* window information line, window status field.

window status field Field on the window information line that shows the current status and assigned number of the window. *See also* window number, window status.

windows mode   Display of one or more MAINVIEW product views on a screen that can be divided into a maximum of 20 windows. A window information line defines the top border of each window. *Contrast with* full-screen mode.

WLM workload   In goal mode in MVS/SP 5.1 and later, a composite of service classes. MAINVIEW for OS/390 creates a workload for each WLM workload defined in the active service policy.

workflow   Measure of system activity that indicates how efficiently system resources are serving the jobs in a workload.

workload   (1) Systematic grouping of units of work (for example, address spaces, CICS transactions, IMS transactions) according to classification criteria established by a system administrator. (2) In OS/390 or z/OS, a group of service classes within a service definition.

workload activity view
                         Tracks workload activity as the workload accesses system resources. A workload activity view measures workload activity in terms of resource consumption and how well the workload activity meets its service objectives.

Workload Analyzer   Online data collection and display services used to analyze IMS workloads and determine problem causes.

workload definition   Workload created through the WKLIST view. Contains a unique name, a description, an initial status, a current status, and selection criteria by which address spaces are selected for inclusion in the workload. *See* Workload Definition Facility.

Workload Definition Facility

In MAINVIEW for OS/390, WKLIST view and its associated dialogs through which workloads are defined and service objectives set.

workload delay view

Tracks workload performance as the workload accesses system resources. A workload delay view measures any delay a workload experiences as it contends for those resources.

Workload Monitor   Online data collection services used to monitor IMS workloads and issue warnings when defined thresholds are exceeded.

workload objectives

Performance goals for a workload, defined in WKLIST. Objectives can include measures of performance such as response times and batch turnaround times.

Index

Symbols

A

B

C

STOP!

IMPORTANT INFORMATION - DO NOT INSTALL THIS PRODUCT UNLESS YOU HAVE READ ALL OF THE FOLLOWING MATERIAL

By clicking the YES or ACCEPT button below (when applicable), or by installing and using this Product or by having it installed and used on your behalf, You are taking affirmative action to signify that You are entering into a legal agreement and are agreeing to be bound by its terms, EVEN WITHOUT YOUR SIGNATURE. BMC is willing to license this Product to You ONLY if You are willing to accept all of these terms. CAREFULLY READ THIS AGREEMENT. If You DO NOT AGREE with its terms, DO NOT install or use this Product; press the NO or REJECT button below (when applicable) or promptly contact BMC or your BMC reseller and your money will be refunded if by such time You have already purchased a full-use License.

SOFTWARE LICENSE AGREEMENT FOR BMC PRODUCTS

SCOPE. This is a legally binding Software License Agreement (**"License"**) between You (either an individual or an entity) and BMC pertaining to the original computer files (including all computer programs and data stored in such files) contained in the enclosed Media (as defined below) or made accessible to You for electronic delivery, if as a prerequisite to such accessibility You are required to indicate your acceptance of the terms of this License, and all whole or partial copies thereof, including modified copies and portions merged into other programs (collectively, the **"Software"**). **"Documentation"** means the related hard-copy or electronically reproducible technical documents furnished in association with the Software, **"Media"** means the original BMC-supplied physical materials (if any) containing the Software and/or Documentation, **"Product"** means collectively the Media, Software, and Documentation, and all Product updates subsequently provided to You, and **"You"** means the owner or lessee of the hardware on which the Software is installed and/or used. **"BMC"** means BMC Software Distribution, Inc. unless You are located in one of the following regions, in which case "BMC" refers to the following indicated BMC Software, Inc. subsidiary: (i) Europe, Middle East or Africa --BMC Software Distribution, B.V., (ii) Asia/Pacific -- BMC Software Asia Pacific Pte Ltd., (iii) Brazil -- BMC Software do Brazil, or (iv) Japan -- BMC Software K.K. **If You enter into a separate, written software license agreement signed by both You and BMC or your authorized BMC reseller granting to you the rights to install and use this Product, then the terms of that separate, signed agreement will apply and this License is void.**

FULL-USE LICENSE. Subject to these terms and payment of the applicable license fees, BMC grants You this non-exclusive License to install and use one copy of the Software for your internal use on the number(s) and type(s) of servers or workstations for which You have paid or agreed to pay to BMC or your BMC reseller the appropriate license fee. If your license fee entitles You only to a License having a limited term, then the duration of this License is limited to that term; otherwise this License is perpetual, subject to the termination provisions below.

TRIAL LICENSE. If You have not paid or agreed to pay to BMC or your BMC Reseller the appropriate license fees for a full use license, then, **NOTWITHSTANDING ANYTHING TO THE CONTRARY CONTAINED IN THIS LICENSE**: (i) this License consists of a non-exclusive evaluation license ("Trial License") to use the Product for a limited time ("Trial Period") only for evaluation; (ii) during the Trial Period, You may not use the Software for development, commercial, production, database management or other purposes than those expressly permitted in clause (i) immediately above; and (iii) your use of the Product is on an *AS IS* basis, and **BMC, ITS RESELLERS AND LICENSORS GRANT NO WARRANTIES OR CONDITIONS (INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE) TO YOU AND ACCEPT NO LIABILITY WHATSOEVER RESULTING FROM THE USE OF THIS PRODUCT UNDER THIS TRIAL LICENSE.** If You use this Product for other than evaluation purposes or wish to continue using it after the Trial Period, you must purchase a full-use license. When the Trial Period ends, your right to use this Product automatically expires, though in certain cases You may be able to extend the term of the Trial Period by request. Contact BMC or your BMC reseller for details.

TERM AND TERMINATION. This License takes effect on the first to occur of the date of shipment or accessibility to You for electronic delivery, as applicable (the **"Product Effective Date"**). You may terminate this License at any time for any reason by written notice to BMC or your BMC reseller. This License and your right to use the Product will terminate automatically with or without notice by BMC if You fail to comply with any material term of this License. Upon termination, You must erase or destroy all components of the Product including all copies of the Software, and stop using or accessing the Software. Provisions concerning Title and Copyright, Restrictions (or Restricted Rights, if You are a U.S. Government entity) or limiting BMC's liability or responsibility shall survive any such termination.

TITLE AND COPYRIGHT; RESTRICTIONS. All title and copyrights in and to the Product, including but not limited to all modifications thereto, are owned by BMC and/or its affiliates and licensors, and are protected by both United States copyright law and applicable international copyright treaties. You will not claim or assert title to or ownership of the Product. To the extent expressly permitted by applicable law or treaty notwithstanding this limitation, You may copy the Software only for backup or archival purposes, or as an essential step in utilizing the Software, but for no other purpose. You will not remove or alter any copyright or proprietary notice from copies of the Product. You acknowledge that the Product contains valuable trade secrets of BMC and/or its affiliates and licensors. Except in accordance with the terms of this License, You agree (a) not to decompile, disassemble, reverse engineer or otherwise attempt to derive the Software's source code from object code except to the extent expressly permitted by applicable law or treaty despite this limitation; (b) not to sell, rent, lease, license, sublicense, display, modify, time share, outsource or otherwise transfer the Product to, or permit the use of this Product by, any third party; and (c) to use reasonable care and protection to prevent the unauthorized use, copying, publication or dissemination of the Product and BMC confidential information learned from your use of the Product. **You will not export or re-export any Product without both the written consent of BMC and the appropriate U.S. and/ or foreign government license(s) or license exception(s).** Any programs, utilities, modules or other software or documentation created, developed, modified or enhanced by or for You using this Product shall likewise be subject to these restrictions. BMC has the right to obtain injunctive relief against any actual or threatened violation of these restrictions, in addition to any other available remedies. Additional restrictions may apply to certain files, programs or data supplied by third parties and embedded in the Product; consult the Product installation instructions or Release Notes for details.

LIMITED WARRANTY AND CONDITION. If You have purchased a Full-Use License, BMC warrants that (i) the Media will be, under normal use, free from physical defects, and (ii) for a period of ninety (90) days from the Product Effective Date, the Product will perform in substantial accordance with the operating specifications contained in the Documentation that is most current at the Product Effective Date. BMC's entire liability and your exclusive remedy under this provision will be for BMC to use reasonable best efforts to remedy defects covered by this warranty

and condition within a reasonable period of time or, at BMC's option, either to replace the defective Product or to refund the amount paid by You to license the use of the Product. BMC and its suppliers do not warrant that the Product will satisfy your requirements, that the operation of the Product will be uninterrupted or error free, or that all software defects can be corrected. This warranty and condition shall not apply if: (i) the Product is not used in accordance with BMC's instructions, (ii) a Product defect has been caused by any of your or a third party's malfunctioning equipment, (iii) any other cause within your control causes the Product to malfunction, or (iv) You have made modifications to the Product not expressly authorized in writing by BMC. No employee, agent or representative of BMC has authority to bind BMC to any oral representations, warranties or conditions concerning the Product. **THIS WARRANTY AND CONDITION IS IN LIEU OF ALL OTHER WARRANTIES AND CONDITIONS. THERE ARE NO OTHER EXPRESS OR IMPLIED WARRANTIES OR CONDITIONS, INCLUDING THOSE OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, REGARDING THIS LICENSE OR ANY PRODUCT LICENSED HEREUNDER. THIS PARAGRAPH SHALL NOT APPLY TO A TRIAL LICENSE.** Additional support and maintenance may be available for an additional charge; contact BMC or your BMC reseller for details.

LIMITATION OF LIABILITY. Except as stated in the next succeeding paragraph, BMC's and your BMC reseller's total liability for all damages in connection with this License is limited to the price paid for the License. **IN NO EVENT SHALL BMC BE LIABLE FOR ANY CONSEQUENTIAL, SPECIAL, INCIDENTAL, PUNITIVE OR INDIRECT DAMAGES OF ANY KIND ARISING OUT OF THE USE OF THIS PRODUCT (SUCH AS LOSS OF PROFITS, GOODWILL, BUSINESS, DATA OR COMPUTER TIME, OR THE COSTS OF RECREATING LOST DATA), EVEN IF BMC HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.** Some jurisdictions do not permit the limitation of consequential damages so the above limitation may not apply.

INDEMNIFICATION FOR INFRINGEMENT. BMC will defend or settle, at its own expense, any claim against You by a third party asserting that your use of the Product within the scope of this License violates such third party's patent, copyright, trademark, trade secret or other proprietary rights, and will indemnify You against any damages finally awarded against You arising out of such claim. However, You must promptly notify BMC in writing after first receiving notice of any such claim, and BMC will have sole control of the defense of any action and all negotiations for its settlement or compromise, with your reasonable assistance. BMC will not be liable for any costs or expenditures incurred by You without BMC's prior written consent. If an order is obtained against your use of the Product by reason of any claimed infringement, or if in BMC's opinion the Product is likely to become the subject of such a claim, BMC will at its option and expense either (i) procure for You the right to continue using the product, or (ii) modify or replace the Product with a compatible, functionally equivalent, non-infringing Product, or (iii) if neither (i) nor (ii) is practicable, issue to You a pro-rata refund of your paid license fee(s) proportionate to the number of months remaining in the 36 month period following the Product Effective Date. This paragraph sets forth your only remedies and the total liability to You of BMC, its resellers and licensors arising out of such claims.

GENERAL. This License is the entire understanding between You and BMC concerning this License and may be modified only in a mutually signed writing between You and BMC. If any part of it is invalid or unenforceable, that part will be construed, limited, modified, or, severed so as to eliminate its invalidity or unenforceability. This License will be governed by and interpreted under the laws of the jurisdiction named below, without regard to conflicts of law principles, depending on which BMC Software, Inc. subsidiary is the party to this License: (i) BMC Software Distribution, Inc. - the State of Texas, U.S.A., (ii) BMC Software Distribution, B.V. - The Netherlands, (iii) BMC Software Asia Pacific Pte Ltd. -- Singapore (iv) BMC Software do Brazil -- Brazil, or (v) BMC Software K.K. -- Japan. Any person who accepts or signs changes to the terms of this License promises that they have read and understood these terms, that they have the authority to accept on your behalf and legally obligate You to this License. Under local law and treaties, the restrictions and limitations of this License may not apply to You; You may have other rights and remedies, and be subject to other restrictions and limitations.

U.S. GOVERNMENT RESTRICTED RIGHTS. UNPUBLISHED -- RIGHTS RESERVED UNDER THE COPYRIGHT LAWS OF THE UNITED STATES. Use, duplication, or disclosure by the U.S. Government is subject to restrictions set forth in FAR Section 52.227-14 Alt. III (g)(3), FAR Section 52.227-19, DFARS 252.227-7014 (b) or DFARS 227.7202, as amended from time to time. Contractor/Manufacturer is BMC Software, Inc., 2101 CityWest Blvd., Houston, TX 77042-2827, USA. Any contract notices should be sent to this address.

Notes

100042119